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A dissertation submitted to the University of Bristol in accordance with

the requirements of the degree of Doctor of Education

at the Faculty of Social Sciences and Law

Graduate School of Education

July 2020

Word count: 48,750

Abstract

Student success continues to be a hot topic in the higher education literature. In many countries retention is often used as an indicator of this success. In Hong Kong, there is an interesting phenomenon that almost 100 percent of students who enter government-funded university four-year undergraduate programmes continue to sophomore years and graduation. In a region with such a high retention rate, the meaning of student success and its driving forces is worthy of investigation, particularly when existing research mostly measures retention or uses similar measures of persistence and withdrawal to indicate first-year success. The present study used student involvement and engagement theories, via the Input-Environment-Output framework, to consider different aspects of driving forces leading to success in the current context.

This mixed-method study was conducted in one of the largest government-funded universities in Hong Kong. It consisted of two main parts. The first, involving focus groups with current university students, was used to broaden the definition of first-year success, to capture students' perceptions of success in multiple domains. In the second part a survey was conducted with over 1500 first-year undergraduate students, to investigate the extent to which different dimensions of first-year experiences influence students' defined success. Data were also gathered from the institution's Electronic Student Records, providing additional demographic and academic information to understand the impact of student characteristics on first-year success.

This study presents a new conceptualization of student success, using students' perspectives to reveal that first-year success is a holistic concept that encompasses overlapping domains of social, personal and academic success. The findings extend the common focus on retention in the student-success literature and show that success is influenced by multiple aspects of student encounters during their first-year university life. The results highlight the complex interconnections between success and the significant impact of multiple influences. Implications for policy and practice for the higher education sector, both in Hong Kong and in the region, are identified from these results.

Acknowledgement

I am deeply grateful to the endless support and guidance from my supervisor, Dr. Jo Rose. It has been an amazing journey, with many ups and downs, emotional distress but also excitement. Thank you for your encouragement and you really helped me to understand deeply the process of rigorous research. I could not have made it through without you.

Special thanks to Professor Harvey Goldstein for the generous support to my thesis on the quantitative analyses and findings. I have been very fortunate to have your professional advice in my learning journey.

I would like to thank my mother, Dora. I made it! Thank you so much for putting up with me throughout the years and helping me out with everything I needed. It was you who gave me continuous support and endless love. Thank you and I love you Mum!

I would also like to thank my colleague, Christine Armatas, for your tremendous support. It was you who made me understand my inner-self. Your empowerment and encouragement made me believe in myself and allowed me to strive for a better self. Thank you so much and it was you that made this happen.

To my very dear friends, Cherrie, Carry, Tirzah, Silent, Laura and Hennie, who always supported me whenever I needed, thank you for being there through the tears, joys and frustrations, and for just listening to me. Your support continues to be a blessing. You all are my sunshine and I will never forget the fun and crazy laugher throughout the challenging times.

I also extend my deepest thanks to my two beautiful children, Pallas and Yanis. I always want to be a role model for lifelong learning. Life is full of challenges, and the path to success is determination, devotion and persistence. Nothing is impossible and it is how you approach things that make it possible! Whenever I was tired, you both gave me energy to keep my wheels going! Thank you for being the lights of my life and the drive to my success. Now, let's have more fun!

Last but not least, it is my husband, Sing, to whom I owe the most thanks, for always being there for me when I needed you, and even more when I didn't know I needed you! You have been an incredible support for me throughout our life together. I will always be deeply grateful…thank you so much for taking care of so many things and sharing my load. I love you!

Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with or with the assistance of others is indicated as such. All views expressed in the dissertation are those of the author.

SIGNED: 

Kannass Chan

DATE: 21, July 2020

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List of Abbreviations

CityU	The City University of Hong Kong
CUHK	The Chinese University of Hong Kong
HKBU	Hong Kong Baptist University
EDUHK	The Education University of Hong Kong
FYFD	First-year first-degree
GPA	Grade-point-average
GUR	General University Requirements
HEI	Higher Education Institutions
HKU	The University of Hong Kong
HKUST	The Hong Kong University of Science and Technology
LU	Lingnan University
PolyU	The Hong Kong Polytechnic University
UGC	University Grants Committee

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Chapter 1 Introduction

1.1 Background to the Study

Students' first-year experiences are very important to their success in university, as they lay foundations for the entire university life and beyond (Barefoot, 2000; Cox, Schmitt, Bobrowski, & Graham, 2005; Harvey, Drew, & Smith, 2006; Upcraft & Gardner, 1989). Substantial learning takes place in the first year of higher education (Pascarella & Terenzini, 2005), but the literature shows that first-year students often report struggles with their learning, especially in relation to academic demands, workload, independent learning, poor time-management, lack motivation and study skills (e.g. Barefoot, 2000; Lowe & Cook, 2003; Yorke, 2004). At the same time, they often experience emotional distress (e.g. anxiety, uncertainty, isolation) that can affect their habits, beliefs and behaviours (Webster & Yang, 2012). Generally, previous studies have confirmed that university transition is usually problematic and first-year students face some serious challenges, of which all these factors can influence student success (Briggs, Clark, & Hall, 2012; Foy & Keane, 2018; Leamnson, 1999; Pittman & Richmond, 2008).

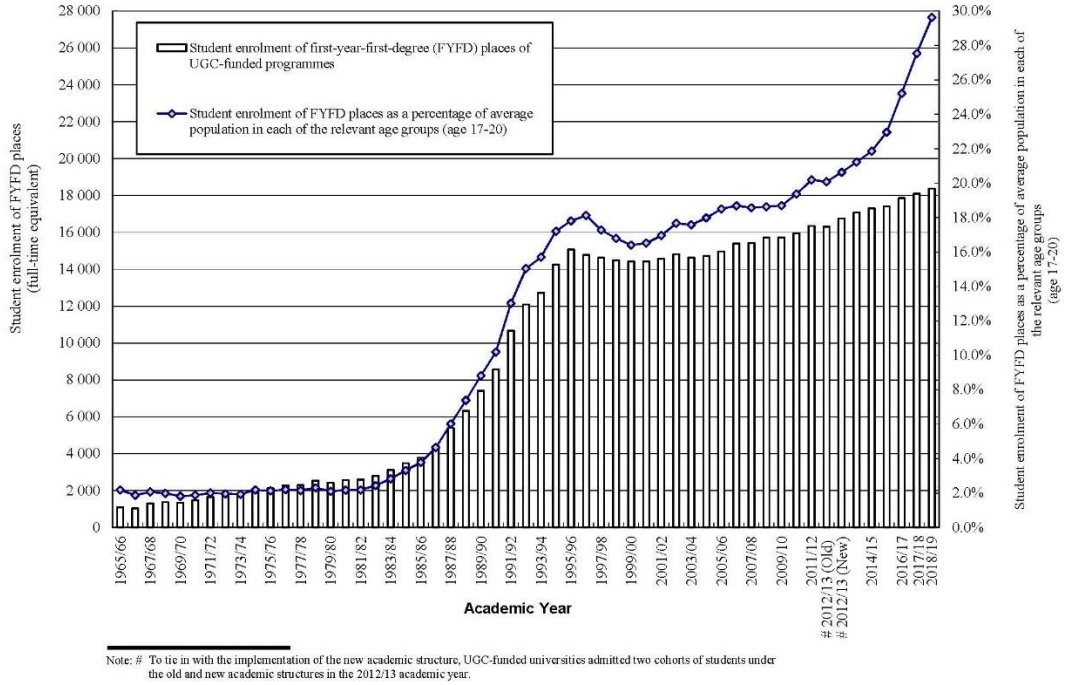
Although there have been studies of first-year experiences reported in the literature for a number of decades, a great deal of this literature has focused on retention, attrition or persistence in defining student success (e.g. Jamelske, 2009; Stewart, Lim, & Kim, 2015; Tinto, 1975, 1993). These measures of success have been used in higher education in many countries (Harrison, 2006). For instance, in the United States, there is evidence that 25 to 30 percent of college students do not return after their first year (College Atlas, 2019; Upcraft, Gardner, Barefoot, Angelo, & Cross, 2008) and approximately 50 percent of university entrants do not complete degrees (Braxton, Hirschy, & McClendon, 2004; College Atlas, 2019; Hess, 2017). Similar patterns were observed in Australia and New Zealand, with approximately one-third of students dropping out of their studies during the first year (Australian Government Department of Education and Training, 2016). The dropout rate was even higher for mature students or students from remote areas (40 percent attrition) (Burke, 2016). Thus, the focus on retention is prominent and meaningful in these contexts. It is

essential to understand the support that undergraduates need to integrate successfully into university so that higher education institutions (HEI) can help them to advance from one year to the next. Nevertheless, the Hong Kong higher education sector has certain characteristics that set it apart from these countries, and retention may not be the best indicator of success. In this regard, there is a need to understand how success is perceived. Thus, the present study focused on the first-year undergraduate experience to investigate how students define first-year success, and how the definition of success is influenced by multiple factors that relate to different dimensions of student life at the university.

The higher education system in Hong Kong is a public/private mix, comprised of a total of 22 local degree-awarding higher education institutions, of which eight are government-funded through the University Grants Committee (UGC); these are referred to as UGC-funded institutions (The Hong Kong SAR, Educational Bureau, 2018). Each year, the eight UGC-funded universities offer approximately 18,000 admission places (see Figure 1-1), and cater for approximately 15-18% of all students in the relevant age groups (aged 17-20) who decide to continue their post-secondary education (University Grants Committee of Hong Kong, 2019b). In these eight UGC-funded Universities, almost all students, i.e. 98.5%, enrolled in four-year undergraduate programmes continue to graduation (University Grants Committee of Hong Kong, 2019a). Hence the issue of retaining students in UGC-funded higher education institutions is emphasized less than in many western countries. There are several possible reasons for this. The Hong Kong higher education system is often regarded as highly competitive and selective (Kember, 2010). The UGC-funded university admission rate has always been kept at around 15 to 18 percent of the students trying for admission over the past 20 years, compared with 2% prior to the 1980s versus 10% in the 1990s (University Grants Committee of Hong Kong, 2019b). This figure is still very low when compared with the Russell Group Universities in the UK where it comprises twenty-four UK public research universities, as the acceptance rates for school applicants ranged from 30% to 71% by secondary school types (Montacute & Cullinane, 2018). Some countries such as Australia and New Zealand have over 80% of secondary school graduates admitted to degree programmes (Organisation for Economic Co-operation and Development, 2012). The comparatively small university admission rate in UGC-funded universities in Hong Kong, is based primarily on the academic results of an open examination in secondary

school, the Hong Kong Diploma of Secondary Education (HKDSE), caters for the top performing students as the university admission. This reduces some of the issues associated with receiving at-risk students with poor academic performances.

Figure 1-1 Student enrolments in first-year-first-degrees (FYFE) in UGC-funded programmes 1965/66 to 2018/19



In 2012, there was a major reform in the Hong Kong education system. This was known as the 3-3-4 Scheme, referring to the structure of three years each of junior and senior secondary school, and 4 years of tertiary education. This Scheme replaced the original 3-2-2-3 system (three years of junior secondary school, two years of senior secondary, two years of matriculation and three years of university education), which had been in place for several decades. In the previous scheme, students entered directly into studying their disciplinary subjects. However, the additional year of tertiary education was added to give them more opportunities to learn beyond their specific disciplines and to develop more holistically. Under the new scheme, the first year of the undergraduate programme is embedded with components that focus on student development beyond the discipline curriculum. Commonly, this includes different types of general education (e.g. freshman seminar, service learning) as part of the undergraduate curriculum, with an aim to enable students in acquiring a broad range of

knowledge to fulfil their intellectual and academic pursuits. In particular, the curricular are designed to help students adapt to university studies and to integrate the knowledge learnt in the university.

With the recent education reform the current dropout rate is still very low, i.e. 1.3% for undergraduate programmes in 2017 (University Grants Committee of Hong Kong, 2019a), something that is not common in countries where retention rate is used as an indicator of success. This phenomenon offers a unique opportunity to explore the meaning of student success, and particularly the role of the different dimensions of the first-year experience in driving success in higher education. The aim of this research was to utilize this opportunity to explore how students perceive their first-year success and to identify predictors of the different aspects of university experience that influence the defined success. Specifically, the study aimed to explore how student success is defined from students' perspectives, beyond the common focus of retention, and the impact of different aspects of the first-year experience leading to student success. The following section begins with a detailed overview of the higher education system in Hong Kong, followed by an understanding of the key characteristics of today's first-year students. The framing and the structure of the study are also defined in this chapter.

1.2 Hong Kong Higher Education Today

As explained above, the eight government-funded universities[1] in Hong Kong are governed by the UGC, which is responsible for advising the government on strategic development and administering public grants its funded universities. Prior to the 1980s, higher education in Hong Kong was always a privileged and exclusive experience. According to the official statistics, there were approximately 2500 students (2.2% of the relevant age groups) registered in the first-year first-degree (FYFD) undergraduate programmes in the only two UGC-funded universities[2] (University

[1] City University of Hong Kong (CityU), Chinese University of Hong Kong (CUHK), Hong Kong Baptist University (HKBU), Hong Kong University (HKU), Hong Kong University of Science and Technology (HKUST), Lingnan University (LU), The Education University of Hong Kong (EDUHK), and The Hong Kong Polytechnic University (PolyU).

[2] The Chinese University of Hong Kong (CUHK), the Hong Kong University (HKU)

Grants Committee of Hong Kong, 2019b). Table 1-1 shows the student population in FYFD places at each UGC-funded university in 2018/19.

Table 1-1 Student population and enrolment in first-year-first-degree (FYFE) in each UGC-funded university in 2018/19

UGC-funded University	Student Population	%	FYFE Enrolment	%
CityU	14,637	15%	2615	14%
HKBU	7,478	7%	1436	8%
LU	2,619	3%	604	3%
CUHK	20,122	20%	3935	21%
EDUHK	8,391	8%	720	4%
PolyU	16,685	17%	2883	16%
HKUST	11,205	11%	2459	13%
HKU	19,579	19%	3755	20%
Total	**100,716**	**100%**	**18,407**	**100%**

In 2000, the Government made a proposal to increase the enrolment rate to 60% of secondary school graduates for the entire tertiary education sector in Hong Kong (Tung, 2000). Yet, there was no intention for the Government to increase public spending on higher education. This means that tertiary students somehow have to fund their own education (Legislative Council Secretariat, 2012). As a result, several self-financed universities were established to provide more opportunities for school students to continue to pursue post-secondary education (Poon & Lin, 2015). This changed the higher education sector substantially and allowed rapid massification, not only in the number of students but also the number of higher education institutions (Poon & Lin, 2015). For example, the 2012 education reform introduced the 3-3-4 Scheme, allowing more school students to experience the entire six-year secondary education. Formerly, only approximately 15% of secondary school students who completed the fifth year of study and passed the Hong Kong Certificate of Education Examination (HKCEE),

carried on to the additional two years of advanced level (A-level) secondary studies. Students who completed A-level studies were required to perform exceptionally well in the Hong Kong Advanced Level Examination (HKALE) in order to gain a place in a tertiary education institution. Under the new scheme, the A-Level examination was replaced by the Hong Kong Diploma Secondary Education (HKDSE) examination that allows comparison to the International Baccalaureate system due to its inquiry-based format, with an extended essay section and open-ended structure (K. Yang, 2010). These changes, along with the increased number of UGC-funded universities, have created more opportunities for students to continue their post-secondary school studies.

Nevertheless, the changes in Hong Kong's higher education sector have not done anything to make university admission easy for many local students, particularly for the public-funded universities (i.e. the eight UGC-funded universities take in 15-18% of secondary school students). The entry to UGC-funded universities is still highly competitive and selective, indicating that significant proportions of students are still frustrated every year due to their inability to gain a place in one of the public-funded universities. The nature of heavily examination-driven admission to the UGC-funded universities has not been changed, i.e. admission is based primarily on the academic performance in secondary education, which may explain partially the low dropout phenomenon in these institutions. As a result, the higher education experience provided by the government is still considered to be exclusive, particularly for the top performing secondary students.

In this reform, the entire tertiary education sector in Hong Kong has changed considerably. All of the UGC-funded universities have transformed their undergraduate curricula from three-year to four-year, to accommodate general or liberal arts education at the undergraduate level. All the UGC-funded universities are required to emphasize the concept of 'whole-person' development and embed some components in the undergraduate curriculum to develop students' generic competencies or "soft skills", such as leadership, physical development, community service and civic education (Lanford, 2016). Three kinds of programme are commonly arranged in the first year of the curriculum, one of which is the freshman seminar. In addition, universities are encouraging greater interdisciplinary collaboration, cultivating students' appreciation of different cultures, and fostering more involvement in community service. To facilitate

these developments, PolyU, for example, has instituted the General University Requirement (GUR) system, incorporating general education and extra-curricular modes of learning into the core undergraduate curricula (The Hong Kong Polytechnic University, 2013). These newly embedded elements underpin the importance of personal development and focus on developing students' competencies in a range of generic skills, which may provide a new perspective for students undergoing this new curriculum. With the institutional focus of whole-person development and gains in generic competencies, it is essential to understand students' perspectives of their first-year success as a result of the implementation of the new curriculum.

Another factor that complicates the university admission process is inconsistency in credit unit systems and transfer policies. In Hong Kong, each higher education institution is an autonomous body, operated its own Ordinance and Governing Council (University Grants Committee of Hong Kong, 2016). The institutions have substantial freedom in planning, organizing, implementing and monitoring their curricula and academic standards, selection of students and staff, initiation and determining of research focus, and internal allocation of resources (University Grants Committee of Hong Kong, 2004a). In other word, public universities in Hong Kong are adopting different credit unit systems and transfer policies for their own academic disciplines and curriculum. For example, the University of Hong Kong is adopting the credit unit system based on the European Credit Transfer and Accumulation System (ECTS) and students are required to complete more than 240 credits for a 4-year undergraduate studies (The University of Hong Kong, 2018). The Hong Kong Polytechnic University, on the other hand, is operating its own credit system, requiring students to complete a minimum of 120 credits, with at least 30 credits in General University requirement and compulsory component in Work-integrated education to fulfilled a 4-year undergraduate studies (The Hong Kong Polytechnic University, 2018a). Thus, the different credit unit systems adopted by different universities make it difficult for students to transfer between programmes within or even between universities in Hong Kong.

The competitive nature of gaining admission to the public-funded universities and the different policies of credit unit systems may partially explain the phenomenon of high retention in the current context and why the culture of completing the entire

four-year undergraduate programmes is strong, since these factors mean that it is uncommon for students to give up their places once they are admitted to UGC-funded Universities.

Another possible reason for the high retention rate is the high value placed on education in Chinese society. According to Marginson (2011), the traditional values rooted in Confucianism lead to the perception in many Asian cultures that higher education is very important. This is also linked closely to the Confucian concept of filial piety. Parents believe that education is perceived as the ticket to a bright future and a key to be socially mobile (Lee & Morrish, 2012; Shek, 2006; Hui et al., 2018) and they have an active role in influencing (e.g. making suggestions and decisions about) their children's education (career paths and education institutions). Particularly, studies indicated that parental role and family background play an influential role in student learning (Chen et al., 2019; Liu & Chiang, 2019), and these cultural values may influence how Chinese students perceive their higher education too, as they feel an obligation to try their best to complete their undergraduate degrees irrespective of any obstacles they encounter.

In summary, although the education reform in Hong Kong provides more opportunities for students to experience post-secondary education, the entry to the government-funded universities is still highly competitive. A number of factors, including different policies of credit unit system at each university and the traditional Confucian concept of filial piety in the local context, can partly explain the phenomenon of high retention or low dropout in the Hong Kong higher education sector. In next section, the University in this study is presented to provide an understanding of the background of this study site in terms of my role in this institution, the mission of the university, and the key characteristics of the undergraduate curriculum that are related to this study.

1.3 The Study Site – The Hong Kong Polytechnic University

This study took place at the Hong Kong Polytechnic University (PolyU), one of the UGC-funded universities where I am currently working. This research is connected strongly to my personal interest and professional experience. I am working in a central

unit, overseeing a number of initiatives that relate to the student experience. I am responsible for the assessment and evaluation of students' learning experiences, which involves the evaluation and analysis of their feedback at different time spans across the entirety of their undergraduate studies. Different dimensions of the student experience are presented and discussed at various levels within the university, including Senior Management, Faculty Deans, Heads of Department and Programme Leaders. These initiatives support all relevant stakeholders in the formulation of policy relating to teaching and learning, and are used to develop improvement plans for curricular refinement or modification to address different students' needs in all kinds of aspects. My experience in the current role, as an education developer in evaluation and assessment, has strengthened my rationale for this study in understanding how first-year students commence their studies in higher education, and how their university experiences relate to their success. More importantly, gaining an understanding of these issues helps me understand better how my role as the institution administrator can help to identify the provisions and support the institution should be providing to students and how the first-year learning experience can be enhanced from the students' perspectives.

PolyU has been recognized as an application-oriented institution for teaching, professional education and applied research. This is reflected in its mission statement – "to nurture critical thinkers, effective communicators, innovative problem solvers and socially responsible global citizens", and to "foster a University community in which all members can excel in their aspirations, with a strong sense of belonging and pride" (The Hong Kong Polytechnic University, 2019b). The University is a multi-disciplinary institution (with English as the medium of instruction), constituted of eight faculties, with over 30 academic departments, offering a wide range of programmes including Professional doctorate, research postgraduate, taught postgraduate, undergraduate and sub-degree programmes. It has the third-largest student population (with approximately 30,000 students in each year group) of the universities in Hong Kong. Each year, it offers over 2800 places for the first-year first-degree students (see Table 1-1), comprises of 16% of all government-funded university admission for undergraduate programmes. As a part of the focus on whole-person development, the University offers many facilities for students to participate in extra-curricular activities (e.g. sports and gyms), and has multiple venues and facilities (e.g. multi-function rooms and restaurants) to encourage students' social participation and exchange. Thus, the

University makes many attempts to provide an avenue for students to engage with the campus, their peers, social counterparts and faculty members as much as possible.

To support students' all-rounded development, PolyU establishes a General University Requirements (GUR), account for one-fourth of the credits of the entire undergraduate programmes, which aims to provide students with the opportunity to learn beyond their disciplines of study. For instance, the Freshman Seminar during first-year studies includes a variety of activities and interactions with industry practitioners, academic, advisors and educators, which aims to facilitate students' self-regulation, autonomous learning and deep understanding and allows them to learn real-world issues in their chosen disciplines. Service-Learning, on the other hand, aims to develop their sense of civic responsibility by applying their knowledge and skills to serve others who are in need. Other components, such as leadership and intra-personal development, language and communication requirements, and healthy lifestyle, are also embedded in the curricula for undergraduate studies. These components in the four-year undergraduate degree programmes are designed to provide the flexible, student-centred, holistic professional education that the University embraces (The Hong Kong Polytechnic University, 2013). While many of the GUR subjects are offered in the first year, more understanding is needed about how first-year students are transitioning into their university studies, and how their perceived learning experiences in different areas influence their success during the first year of university life.

In order to explain more about the phenomenon of higher education in local context, the following section provides a brief description of the development of Hong Kong's higher education sector and the emerging characteristics of today's first-year students, with a particular focus on the socio-demographic information of PolyU's first-year students.

1.4 Today's First-year Students in Hong Kong

Hong Kong has long held an important position as an international city for the interface between Asia (especially China) and the rest of the world (University Grants Committee of Hong Kong, 2004b). The transfer of sovereignty over Hong Kong from the UK to China in 1997, and the effects of globalization have continued to shape the

higher education sector in Hong Kong. In 2004, the UGC launched a guiding document for the Higher education in Hong Kong, aiming to establish the higher education sector as "the education hub of the regions", driving forward the economic and social development of Hong Kong (University Grants Committee of Hong Kong, 2004b). The future of Hong Kong's higher education sector lies in its ability to stay unique and to sustain its global competitiveness as a high value-added, innovative and knowledge-based society. In recent years, internationalization has become one of the central themes of all UGC-funded institutions. Universities are undertaking important roles to equip students with a greater sense of the wider world and the ethical tools beyond merely the transmission of academic, disciplinary or professional knowledge. This focus on tertiary education has contributed to ongoing changes in the student demographic profile. For example, the number of non-local students studying in UGC-funded programmes has increased significantly, from 1,377 (1.6% of total student enrolment) in 1998/99, 14,510 (15.2%) in 2013/14, to 18,035 (17.9%) in 2018/19 (University Grants Committee of Hong Kong, 2019a). Students from the Mainland of China continue to be the majority of non-local students, increased from 72.6% in 1998/99 to 78.4% in 2013/14 among all non-local students. Students from other Asia countries and the rest of the world have recorded an increment of 20.3% and 7.3% respectively over 1998/99 to 2013/14 (Census and Statistics Department, HKSAR, 2014).

The changes in student profiles imply that students are more likely to interact with other students from different backgrounds and diverse cultures. This resonates with the concepts of internationalization in academic discourses, resulted in a number of phenomena including internationalizing of staff, students, the curriculum and the university system (Pretor Fok, 2007). The benefits of intercultural learning have been demonstrated extensively but studies have shown that students often encounter problems and issues with other international student groups, indicating that integration between students from different cultures is not an easy task (Chang, Denson, Saenz, & Misa, 2006; Denson & Bowman, 2017; Jayakumar, 2008; Moon, 2016). PolyU is no exception and internal reports have identified issues about a lack of interaction between local and non-local students. Thus, it is essential to educate students to appreciate different cultural perspectives, to value and respect diversity in the higher education system, which it is also part of the components embedded in the general education programmes. Particularly in Hong Kong, which is often described as "East meets

West", being an international city with a wide range of socio-cultural and political perspectives, the awareness and understanding of multi-cultural diversity is important.

To gain an understanding of the characteristics of today's first-year students in Hong Kong, Table 1-2 presents the socio-demographic characteristics of first-year undergraduate students in PolyU (The Hong Kong Polytechnic University, 2019a). First-year undergraduate students in PolyU share similar socio-demographic characteristics with other UGC-funded universities in Hong Kong (e.g. The Education University of Hong Kong, 2019; The University of Hong Kong, 2019). The gender ratio at PolyU for the newly registered full-time (first year) undergraduate students was 1.06:1 for male and female in the 2017/18 academic year. This ratio fluctuates across years, ranged from 1:1 in 2000/01; 1:1.1 in 2005/06; 1:1.07 in 2010/11 and 1.07:1 in 2015/16. In the most recent cohort, conducted in 2017/18, over 97% of the first-year students are aged 16-21 (74.5% aged 16-18; 22.9% aged 19-21) and 2.6% were aged 22 or above. Almost all were single (99.99%) and Chinese (99.4%). Parent's education attainment of first-year students at PolyU seemed to be not particularly high - with approximately one quarter of parents (either mothers or fathers) having either finished their education at the end of primary school (21.3%) or having no formal education (2.2%). Cantonese was their primary language spoken at home (98.9%). PolyU's first-year students came from households with family incomes slightly above the norm in the Hong Kong population - median monthly income was $27,422 compared with $25,000 in population (Census and Statistics Department, HKSAR, 2014).

Table 1-2 Socio-demographic characteristics of first-year students at PolyU

2017/18	%
Gender	
Female	50.6
Male	49.4
Age Groups	
16-18	74.5
19-21	22.9
22-24	2.0
25+	0.6
Marital Status	
Single	99.99
Married	0.001
Ethnicity	
Chinese	99.4
Others	0.06
Education Attainment of Parents (either one)	
No formal education	2.2
Primary education	21.3
Secondary education	55.5
Post-secondary	21.1
Language Spoken at Home	
Cantonese	98.9
Others (e.g. English, French, Hindi, Indonesian)	1.1
Monthly Household Income in HK Dollars	(HK population 2016
Below $10,000	census)
$10,000-19,999	8.0 (19.2%)
$20,000-29,999	22.2 (21.8%)
$30,000 or above	25.7 (15.8%)
	44.1 (43.2%)
Financial Support	Median $27,422 ($25,000)
Family support	
Part-time/summer job	94.4
Personal saving	72.3
Government support	53.7
Assistance from PolyU	41.1
	20.2

A typical first-year student is financially dependent, with 94.4% in the 2014 census expecting family support for their study and living expenses. Close to three-quarters of them (72.3%) expected to rely on income from part-time work or summer jobs, and 53.7% expected to rely on personal savings. About 40% hoped they could

obtain financial assistance from the Government and 20.2% indicated an expectation for financial assistance from the university.

Although there is no demographic information on first-year students of the entire population in Hong Kong, PolyU students seem to represent the norm of the population (Census and Statistics Department, HKSAR, 2014) according to comparisons of the gender profiles and household characteristics including parent's education attainment and their monthly household income. But clearly there is a gap with regard to students' profiles that needs to be addressed to enable a better understanding of what support is needed by first-year students with different characteristics. In next section, a brief description is presented of how this study is set up based on the discussions made in this Chapter.

1.5 Framing of the Study

This section briefly describes the relevance of the study, the purpose statement and the research questions addressed by this study. An overview of the structure of this thesis is also presented.

1.5.1 Relevance of the Study

Several issues have been discussed above that have helped to shape the relevance of this study. The first-year experience is context-driven, i.e. it can vary across countries and universities, due to the complexities and diversity of student participation, differences in universities' missions and goals, and the provision of support in different higher education institutions. Higher education in Hong Kong has a unique characteristic of high retention (i.e. almost 100%) in its undergraduate programmes in the public-funded universities. The typical measures of success used in the literature, i.e. retention, persistence and withdrawal, have become less relevant in this local context because retention rate is almost at its ceiling level. Thus, there is a need to consider other perspectives of student success beyond these common measures.

Despite the need to address these issues, there has been a lack of studies of the first-year experience conducted in Asian countries. This study aimed to add significant scholarly contribution to the context of success beyond the most common focus in the

literature on retention, since retention is not as much of a problem in the Hong Kong context as it is in other countries. Although there has been a number of studies on student learning and engagement in the Mainland China, and some in other East Asian regions (e.g. Taiwan, Japan), many of them focused on quality measurement rather than seeking understanding or recognizing means to achieve student success (Chang, 2015; Jinghuan et al., 2014; Lin et al., 2018; Yamada, 2016; Yin, 2018; Zhang et al., 2015; Zhu & Arnold, 2013). Moreover, research identifying driving forces that influence student success is very limited, and almost non-existence in practice in Asian countries. This study has the potential to be a significant resource for understanding important aspects supporting first-year experience in higher education. Since the high levels of higher-education retention in Hong Kong also occur in other Asian regions (e.g. Singapore, Taiwan and Mainland China), the study has potential to contribute useful information about first-year success experiences in these countries (Marioulas, 2017).

1.5.2 Purpose Statement

This was a two-phased study. The purpose of the first phase was to investigate the students' perspectives of success in the first year of higher education. The findings from the first phase helped to inform the second phase of the study, to identify predictors of the defined success. The results from both phases of the study were integrated to identify areas of support and provisions to all first-year students in higher education.

1.5.3 Research Questions

This study sought answers to the following questions:

First phase (qualitative)

1. What are students' definitions of first-year success and how they are related to the first-year university experience?

Second phase (quantitative)

2. What is the relationship, if any, between different domains of success as defined in phase one of the study?

3. To what extent do different aspects of university experience influence each domain of success in the first year of higher education?

1.6 Structure of the Study

This thesis is organized into seven individual chapters.

Chapter 1 addresses the focus of the current study and the context in Hong Kong to provide a rationale for the present study. It explains the importance of the first year higher education. The research questions have also been outlined.

Chapter 2 reviews relevant literature that is relating to this study. This literature review shows existing definitions of first-year success, identifies key domains of predictors for student success, and provides relevant theories that framed this study.

Chapter 3 discusses the methodological choice. It explains why two-stage exploratory mixed-method research is appropriate for the present study and what potential benefits could be obtained.

Chapter 4 focuses on the research design, methods used and findings of the phase one, i.e. student focus groups in qualitative study. It gives a description of how qualitative data was collected through student focus groups and presents the findings of students' perceptions of first-year success.

Chapter 5 describes the research design, methods used and findings of the phase two, i.e. a large-scale student survey. It reviews the use of survey instruments, process of collecting students' feedback via online surveys, profile of participants and survey response rates. The findings of the quantitative study are presented, focusing on identifying factors that influence student success.

Chapter 6 discusses the overall results collected and seeks answers to all the research questions by presenting the analyses of the research findings together from both phases of the study. It describes the connection between successes in different

dimensions of the first-year experience from the students' perspectives, and examines the interplay of the different factors affecting the defined success.

Chapter 7 summarizes the key contributions of the study and discusses the implications for future policy and practice in relating to how higher education institutions in supporting students to attain success in their first year. This includes proposals for recommendations and suggestions for future research. Key limitations of the study are addressed, along with final thoughts to reflect my personal journey through this research process and the potential impact of this research.

Chapter 2 Literature Review

This literature review comprises four distinct areas: global trends in higher education; defining first-year success in higher education; exploring theoretical frameworks that inform this study; and identifying predictors of first-year success that are relevant to the current context. This chapter begins with an overview of current trends in higher education, followed by a discussion of how first-year success can be defined in university undergraduate studies. Common measures of success indicators and success from different perspectives are explored, with a particular focus on the phenomenon of student success in Hong Kong, to identify gaps in the current literature to inform the first phase of the present study. Common predictors of first-year success are reviewed to provide an overview of factors from different aspects of the first-year experience that could influence student success. This helped to identify the choice of variables and the research design adopted in the second phase of the study.

2.1. Global Trends in Higher Education

Higher education institutions across the world are operating in a highly competitive environment (Marginson, 2006). Globalisation has transformed higher education sector, causing dramatic changes to the character and functions of higher education. Held et al. (2000) described the transformation as "the widening, deepening and speeding up of worldwide interconnectedness" (p. 2). The increasing global interconnection has caused a rapid expansion in global higher education market, moving from elite education to massification in higher education system (Meyer et al., 2011; Trow, 1999). Student enrolments have grown substantially towards the end of twentieth century, and the increased enrolment represents a shift in the role of universities, from being "exclusive" to inclusivity in higher education - providing different services to a more diverse group of students with different needs (Underdal, 2010). Widening participation has brought students from non-traditional backgrounds to universities and the diversity of student profile poses new demands for institutions, such as the quality and standard of teaching and student learning, and the quality of a range of student services (e.g. counselling and career advise) (Henard & Leprince-Ringuet, 2008; Scott, 1995; Tomlinson, 2008). Students may have different backgrounds, talents,

expectations and motivations, and universities worldwide are being expected to accommodate greater numbers of students with different needs (Hornsby & Osman, 2014).

Higher education, on the other hand, is swept up in global marketization (Marginson & Wende, 2007), shifting the culture to becoming increasingly market-driven (Davis & Farrell, 2016; Deem et al., 2007; Yang, 2003). To survive in the rapidly changing world, universities are focusing on marketization, including increased privatization, customer-focused, collaboration between higher education and industry, and are operating more like business enterprises (Bagley & Portnoi, 2014; Yang, 2003). More emphasis is placed on results, effectiveness and performance, indicators and evaluations, which has significantly influenced the higher education sector over the past two decades (Lucas, 2014). One of the implications of these global forces is related to the increased investment on building research capacity for human capital development (Rizvi & Lingard, 2009), which led to a race for global ranking or league tables of higher education institutions (Bagley & Portnoi, 2014). The battle for "world class excellence" has accelerated, putting more emphasis on academic research as most rankings focus disproportionately on research (Dill & Soo, 2005; Locke et al., 2008). Nevertheless, concerns about the validity, reliability, and criteria of the league tables have been raised and debates regarding rankings' elitism of what constitutes "excellence" in higher education are continued (Hazelkorn, 2009).

Blackmore (2015) described the global competitiveness in higher education as an idea of a "prestige economy". The 'economy' aspect generally refers to "a social system of production, exchange and consumption of goods and services" (Blackmore & Kandiko, 2011, p. 403). The 'prestige' aspect indicates a value that is recognized, of which it attaches to some kinds of tangible and intangible benefits. The value of prestige is affecting all stakeholders associated with the higher education sector including government, industrial partners, academic organisations, sponsors, academics, employers, parents and students. For example, universities are under expectation to organize research and teaching in a more effective way and to demonstrate evidence on excellent research and teaching performance. The institutions, on the other hand, have been encouraged to seek different sources of funding and to develop collaborations between university research and society. Academic faculty members are under pressure to fulfil the demands on teaching and research (Coate et al., 2001), and students are

concerned with whether the return on investment on higher education is justified (Miller, 2010).

Associated with these market-driven forces is the move towards a user-pay system in higher education (Kretovics & Michael, 2005; Yang, 2003). University students of the twenty-first century demand that their learning experiences are value for money (Brown, 2015), putting pressure on higher education institutions to improve their employability (Knight & Yorke, 2003). Under globalisation and internationalisation, universities are prioritising the preparation of students to operate in a much more globalised world. The curriculum is shaped to increase students' international awareness and intercultural skills, and programmes to incorporate activities with global elements throughout the teaching and learning process and extra-curricular activities, such as liaison with local cultural/ethnic groups, exchange programmes, research and scholarly work (De Wit, 2011).

The above trends, including expansion of higher education, marketization, university rankings and changing role of higher education, have significantly shaped student experience in higher education (Green & Baer, 2000). While these global factors have encouraged higher education institutions to take action in raising the quality of teaching and enhancing student learning experience, an understanding of students' views on their learning, particularly what "success" means to them, is equally important (Brooks et al., 2014). The next section attempts to explore the concept of student success in the existing literature.

2.2. Student Success in High Education

This section presents an overview of common definitions of first-year success, to gain an understanding of how student success has been characterized in the literature. Different measures of first-year success are reviewed to provide the background of current practices implemented in higher education institutions internationally. In addition, first-year success in the Hong Kong context is considered, since it is important to understand how success can be defined and measured in local contexts.

2.2.1 Definitions of First-Year Success

Assessment outcomes

There has been little consensus about the definition of student success in higher education. What constitutes first-year success could mean very different things to different stakeholders. Institutions in western countries (e.g. the US, UK, Australia) typically measure student success through the lens of retention, attrition, withdrawal or percentages of dropouts, rather than focusing on what it means to students to succeed. One possible reason for this common approach may be the cost of student attrition to universities' finances and reputations (Schneider, 2010). For this reason, several studies have explored student success further by examining the reasons for withdrawal and non-completion (Aulck et al., 2016; Barefoot, 2004; Braxton & Hirschy, 2004; Ljungdah, 2014; Tinto, 2001; Yorke, 2000; Zepke et al., 2005). One particular theory on student retention and dropout, that of Tinto (1975; 1988; 2001; 2006; 2010), has been influential. Tinto's theory was that whether or not students stayed in college through their undergraduate studies was determined by how they felt they had integrated academically and socially into the college life. The greater the integration, the more likely the students would be to stay. Tinto's model examined a wide range of influences on retention, considered pre-college characteristics, college experience and students' out-of-class experiences and addressed the magnitudes and mediating effects of student persistence. Although his integration discourse retained a dominant position in relation to student success, this theory attracted criticisms such as limited focus on traditional students and lack of inclusion of other student factors (Pascarella et al., 1986; Tierney, 1992; Yorke & Longden, 2004). In addition, this theory emphasized contexts where there is room for retention rates to be improved. In Hong Kong, where retention is almost at a ceiling level, there is a need to explore student success from perspectives other than retention.

Quite often, academic performance is used to indicate student success. This has been measured by indicators such as subject grades, grades and grade-point-averages (DeBerard et al., 2004; Jennings, Lovett, Cuba, Swingle, & Lindkvist, 2013; Mills, Heyworth, Rosenwax, Carr, & Rosenberg, 2009; Pike & Saupe, 2002; York, Gibson, & Rankin, 2015). Grades have been considered an almost indispensable way to measure student success and achievement in university as they are so readily available, easily

accessible and retrievable. Students are very much accustomed to their success being assessed by academic performance, as grades have been used commonly for a range of purposes including admissions and scholarship awards, graduation requirements, or even employment decisions. A study by Jennings et al. (2013) showed that a majority of students (over 80%) perceived getting good grades or improving one's grades, particularly in their first year, as the primary indicator of student success. This was particularly relevant when high grades were a pre-requisite for future aspirations such as studying medicine. Depending on the situations, students in some programmes in Hong Kong choose their disciplines after the completion of the first year of university studies (i.e. often the first-year GPA will be a pre-requisite). In these cases, academic performance is important in enabling a student to pursue future aspirations. Pascarella and Terenzini (2005) stated that college grades are perhaps the best predictor of student persistence and degree progression, although one could argue that high grades may be less of an indicator of persistence than moderate grades, as a student who finds work challenging may need to put more effort into achieving a moderate grade than the bright student would to achieve a high grade. Some studies found that first-year and subsequent grades predict degree completion, and that good grades improved the chance of completing a degree (Adelman, 1999; Gifford, Briceno-Perriott, & Mianzo, 2006; Schwartz & Washington, 2002; Oguntunde, Okagbue, Oguntunde, Opanuga, & Oluwatunde, 2018). These studies showed the inevitability of associating academic performance with success in higher education.

Nevertheless, the validity of using grades as the only measure of a student's ability has been challenged often. Grades could be influenced by many factors including student motivation, study habits, organizational skills, course grading strategies, class sizes, and even instructional quality (Duncan & Noonan, 2007; Ellis, Burke, Lomire, & McCormack, 2003; Kokkelenberg et al., 2008; Pascarella & Terenzini, 2005; Sadler, 2009). There is some evidence that students who withdraw from their institutions have reasons other than poor academic performance. In fact, many departing students have had good academic records at the time of departure (Tinto, 1987, 1993). Smith (2003) suggested that an equal focus on both academic and non-academic elements of student life is necessary for retention, and that concentrating only on academic matters will not help to retain students beyond their first year of study. Grade, *per se* does not necessarily represent how successful a student is. The

exclusive use of academic performance as an indicator of success needs further consideration, particularly in the context of Hong Kong where, due to the competitive university admission system, many first-year students in government-funded universities are academic achievers, i.e. the majority had good grades in their secondary education.

Personal development

Student success, on the other hand, can be defined beyond the assessment outcomes of success, to include the development of students' skills and competencies. Padilla (2009) described student success as "an outcome of human interaction in complex educational systems, which in turn are embedded in complex social systems" (p.1). The outcome, as described, can be a series of diverse indicators including student development, satisfaction, career, and students' attitudes. A number of studies have also used students' intellectual development to define success, including the development of critical thinking and problem-solving skills, independent, creative and collaborative skills, interpersonal relationships, leadership and civic engagement, social well-being, spiritual development, locus of control, and control of emotions (Arnold, 2016; Cuseo, 2008; Gifford et al., 2006; Parker, Summerfeldt, Hogan, & Majeski, 2004; Pritchard & Wilson, 2003; Schoeffel, van Steenwyk, & Kuriloff, 2011; Terenzini et al., 1995; Van der Zanden, Denessen, Cillessen, & Meijer, 2019; Wilcox, Winn, & Fyvie-Gauld, 2005; Zohar, Marshall, & Marshall, 2000). Kuh et al. (2006) linked student success to learning and personal development of outcomes in five domains - cognitive complexity, knowledge acquisition and application, humanitarianism, interpersonal and intrapersonal competence and practical competence. Other researchers shared similar views about attribute development, although they may have labelled the domains differently (Cuseo, 2008; Gardner et al., 2001; Harris, 1998; Terenzini & Pascarella, 1991, 2005; Terenzini et al., 1995). For example, York, Gibson, & Rankin (2015) referred to these types of outcomes or measures (e.g. critical thinking) as acquisition of skills and competencies. The American Federation of Teachers Higher Education (2011), described this whole area of the personal development domain as the gathering, processing and applying of a broad set of intellectual abilities in both academic and practical contexts. These abilities include creative thinking, critical inquiry, problem

solving, independent learning, data manipulation, synthesis, analysis and assessment of information. Moreover, professional or technical skills have been included in the components of student success, including written and oral communications, quantitative and information literacy, and teamwork skills, which can be seen as the ability to apply the knowledge learned in a particular field of study (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013; Kuh, 2008; Lizzio & Wilson, 2004).

These skills are sometimes described as generic skills, which have been discussed as core components of student learning in contemporary higher education (Braxton, 2009; Luca & Heal, 2007). Nevertheless, it is not an easy task to measure the acquisition of these generic skills. There have been few investigations of the kinds of generic skills that should be acquired by students at different levels of higher education as they may depend on the goals and objectives of the institutions (Tait & Godfrey, 1999). Thus, the discrepancies in identifying what constitutes generic skills make it almost impossible to develop a comprehensive framework for measuring them. To gain more understanding, researchers have investigated the development of generic competencies in a wide range of academic disciplines including arts and humanities, engineering, medicine and nursing and social sciences (Badcock, Pattison, & Harris, 2010; Jiram, Bujang, Zarin, & Latib, 2016; Murdoch-Eaton & Whittle, 2012; Patterson & Bell, 2001). Others have evaluated differences in the development of generic skills throughout the entirety of undergraduate studies across disciplines and time (Badcock et al., 2010). While the development of generic competencies is vital in leading student success, the research suggests the need for higher education institutions to consider whether there are any particular generic skills that first-year students should develop as pre-requisites to others, and what kinds of first-year programmes or training should be provided.

More recently, new measures of first-year success have been found in the literature, offering new insights for investigation. For example, student engagement (Kuh et al., 2006) and attainment of learning outcomes (Mayhew & Engberg, 2011) have received considerable attention as indicators of student success. Some studies have investigated different dimensions of student engagement in relation to college success and how they can be engaged actively (Bryson & Hardy, 2010; Pascarella, Seifert, & Blaich, 2010; Krause & Coates, 2008; Webber, Krylow, & Zhang, 2013). A sense of belonging is another indicator that has been used increasingly as a measure of first-year

success in higher education research (Chu, 2016; Davis, Hanzsek-Brill, Petzold, & Robinson, 2019; Hurtado et al., 2007; Morrow & Ackermann, 2012; Ribera, Miller, & Dumford, 2017). These new measures of success indicate that the definitions of student success can evolve and change over time, suggesting that the concept should be revised or revisited regularly.

2.2.2 First-Year Success from Different Perspectives

It is not surprising to see researchers hesitate in defining student success because different people may perceive it differently. In the process of searching the literature, I have broadly categorized the measures used for first-year success into institution-focused, student-focused and a combination of both. In general, institution-focused measures tend to include assessment outcomes (e.g. retention, academic performance) as indicators of student success, while student-focused measures emphasize student development and well-being. In the following section, success is examined from different perspectives to enable a more thorough understanding of how first-year success can be perceived from different perspectives.

Institution-focus

The definitions of student success are often specific to institutions. For example, Waggoner and Goldman (2005) showed how three public universities in the United States developed policies to improve student retention as reflected by the institutions' mission statements. As described earlier, typical indicators of student success used by the higher education institutions are the measure of student retention (or persistence) and assessment outcomes (e.g. grades or GPA) (Deen & Leonard, 2015; Mills et al., 2009; Wilcox et al., 2005; York et al., 2015; Yorke & Longden, 2008). Harvey et al. (2006) explained that retention is commonly associated with financial requirements to meet budget-related performance indicators, and may reflect the high costs associated with the large number of students who do not return for a second year (Marthers, Herrup, & Steele, 2015; Schneider, 2010). In addition, first-year retention or withdrawal rates are important to universities reputations and rankings in league tables, and frequently perceived as an indicator of institutional quality. Some studies have

shown that students who have more positive college experiences and learning gains are more likely to stay (DeShields, Kara, & Kaynak, 2005; Stanford, Rocheleau, Smith, & Mohan, 2017). These factors certainly influence the choices of indicators used by institutions to represent their perceptions of success.

Another frequent success indicator used by higher education institutions is student satisfaction (e.g. Baik et al., 2015; Krause & Coates, 2008; Yorke, 2000). Astin and others, (1993) pointed out that satisfaction is the totality of a student's impressions of particular situations or a particular institution, which should be regarded as an intermediate outcome of progress toward graduation. Student satisfaction reflects how well students have adjusted to their first-year studies, and many researchers have examined the impact of student satisfaction on retention or dropout (e.g. Keup & Barefoot, 2005). For example, some studies of first-year students linked the likelihood of retention or withdrawal from an institution to the aspects the students found deeply satisfying or deeply dissatisfying (Harrison, 2006; Nevill & Rhodes, 2004). Other research shared similar findings, recognized that dissatisfaction and unhappiness with aspects of the first-year experience were risk factors leading to withdrawal (Yorke & Longden, 2008). Many studies have attempted to examine relationships between different aspects of experience and student satisfaction. Chickering and Gamson (1987) identified seven principles for good practice in undergraduate education, and pointed out that these principles (i.e. student-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning) influenced student satisfaction. A more recent study in the UK, by Pennington, Bates, Kaye, & Bolam (2018), explored psychological and contextual factors, and found that academic self-efficacy and social identity played a key role in student satisfaction. Although the use of student satisfaction played a more general role, it has been cited as a key factor in driving successful transition and retention. As a result, this dimension of success should not be neglected in the process of formulating success indicators (Keup & Barefoot, 2005; Thomas, 2012).

Student-focused

Student success can be defined differently when taking the student perspective into account. Yazedjian, Toews, Sevin, & Purswell (2008) asked first-year students who

had good academic performances to define success and three themes emerged: "good" grades, social integration and the ability to navigate a college environment. An interesting observation was that the good grades did not refer to an absolute value. Instead, it was the grades that met individual expectations. Corella (2010) asked first-year students to rank the top five definitions of college success from a list of seventeen items. They were: obtaining a fulfilling and satisfying job after college, knowing how to balance life responsibilities, graduating from college, finding out who they truly are, and becoming well-rounded. Although these definitions did not refer only to first-year success, they did represent first-year students' perceptions. The findings from these studies indicate that success in students' eyes is related to personal development of independence, self-awareness, progression and responsibility, which are some of the characteristics of adulthood. Consistently, the American Federation of Teachers, Higher Education (2011) defined student success as the achievement of the student's own education goals, which can differ for individual students and change over time. This definition concurs with students' perceptions of success, that it should be oriented towards their own development and education goals. In particular, when students undergo many changes and challenges in their first year, they tend to perceive success as multi-faceted, including immediate success (e.g. making new friends) that can help them to get on well with their university studies and other prolonged success (e.g. getting a job, graduating from university) that could go beyond the completion of the undergraduate degree. Undoubtedly, students' perceptions of success are not restricted to the higher education institutions' focus on assessment outcomes (e.g. grades, persistence), as explained in the previous section; they are also concerned with personal growth and success in gaining skills and competencies that support them to become more mature and independent adults (Tanner & Arnett, 2016).

A Combination of Perspectives of Success

Student success can be seen as a combination of academic and personal development outcomes, and specific development as Kuh et al. (2011) proposed that student success should be defined broadly to include academic achievement, acquisition of knowledge, engagement in educational purposeful activities, satisfaction, attainment of educational objectives, skills and competencies, persistence, and performance after

post-tertiary education. Cuseo (2007; 2014) suggested that success embraces a holistic phenomenon that constitutes multiple dimensions of personal development and multiple goals of higher education. He further categorized student success into the five domains of student retention/persistence, educational attainment, academic achievement, student advancement and holistic development (Cuseo, 2014). Upcraft, Gardner, & Barefoot (2004) suggested a relatively comprehensive definition of first-year student success as the ability to make progress toward a range of domains, which includes developing academic and intellectual competence, establishing and maintaining interpersonal relationships, sustaining physical health and wellness, exploring identity, determining career and lifestyle, developing civic responsibility, exploring spiritual dimensions of life, and respecting diversity. Braxton (2006) gave a similar definition and proposed eight domains to be considered: academic attainment, development of academic competence, cognitive skills and intellectual dispositions, acquisition of general education, occupational attainment, preparation for adulthood and citizenship, personal development and personal accomplishments. Findings from this literature acknowledged that student success should be multi-dimensional, consisting not only of academic performance, as used traditionally, but also the mastery of other intellectual skills and competencies that help the whole-person development, i.e. a combination of perspectives from students and higher education institutions.

The holistic definitions of success, as described, indicate that student success requires higher education institutions to invest much attention and effort in providing opportunities for students to engage actively with different dimensions of the university. This concept is associated with the theory of student involvement and engagement, thus laying a theoretical foundation for this study as discussed in a later section. Nevertheless, defining and achieving success is the result of efforts from a broad group of campus constituents including faculty and students (Hunter, 2006). Yet, the practice of defining student success has often been left in the hands of higher education institutions, with students' perspectives of success often neglected. To address this discrepancy, the aim of the first part of this study was to draw on students' perceptions to identify their definitions of success in their first-year university studies. In particular, it was deemed important to explore different aspects of their university lives in connection with their defined success.

2.2.3 The Hong Kong Context

As discussed above, academic performance is almost an inevitable measure of learning and achievement in higher education. The phenomenon of using academic performance to measure student success is particularly prominent in Hong Kong. The Hong Kong education system is very examination-oriented; assessments and examinations are used throughout any curriculum and at every level. Success indicators are built upon academic performance and examinations are used primarily to determine students' competencies. The university admission in Hong Kong is predominantly based on a single public examination at the end of secondary school (i.e. Hong Kong Diploma of Secondary Education, HKDSE), although some programmes do occasionally consider other achievements such as personal portfolios, as in the case of admission to Advertising Design at PolyU (School of Design, The Hong Kong Polytechnic University, 2019).

In Hong Kong, all government-funded universities admit students based on their academic results in the HKDSE, which consist of an aggregated score for a minimum of five subjects selected by the individual student. The highly competitive and selective admission system in Hong Kong strongly implies that students who gain places in the public universities are high academic achievers. Thus, the use of academic performance as the indicator of first-year success may become less pertinent in the Hong Kong context because, on admission to the public university, the students are generally academic "high-fliers".

As a practitioner, I often question the extent to which higher education institutions should rely on academic performance as the only measure of success and, if not, what other measures can be used. Supiano (2019) described explicitly how grades can undermine student learning. In a study testing the effects of three forms of feedback on students' subsequent performances and motivation - a grade, comments (how students' task performed can be improved), or nothing - she found that students who received either grades or comments performed better on a subsequent task than those who did not receive any feedback. However, only the students who received comments did better on a subsequent task requiring creativity or problem solving. This finding indicated that comments support intrinsic motivation while grades can reduce students' interest in learning. In the context of the current study, with the majority of students

being academic achievers, there is a need to define (or re-define) student success to explore what it means to first-year students in public universities in Hong Kong.

The Hong Kong Government adopted a "role-differentiated" approach to enhance global competitiveness for the higher education sector in Hong Kong (University Grants Committee of Hong Kong, 2004a). In other words, each higher education institution has a very distinct role, mission and performance, which may impact not only on the institution's strategic direction but also on how individual institutions see student success. For example, PolyU emphasizes "application-oriented" programmes, providing value-added education, with a balanced approach leading to the development of all-round students with professional competence. Developing students' generic and academic competencies (e.g. critical thinking) is part of the institution's missions (The Hong Kong Polytechnic University, 2018b). Thus, it is not surprising to see student success associated with a range of academic and personal competencies, although there is no specific success indicator developed for the first year of undergraduate studies within this institution. In relation to this situation, in the first phase of this study it was necessary to seek an understanding of students' definitions of first-year success and how it is related to different aspects of the first-year experience.

To summarize, the first-year experience is context-driven, i.e. varies across universities due to the complexities and diversity of student participation, differences in the universities' missions and goals, and the provision of support in different higher education institutions. Student success embraces a diverse range of definitions and the selection of indicators of first-year success can depend highly on the perspectives of different stakeholders of the institution. However, for a student to achieve any of these success indicators, there is an assumption that this particular student is required to be actively involved and engaged with university learning. Involvement and engagement theories were chosen to guide this study to facilitate an understanding of the process of student learning, and even more importantly to allow higher education institutions to recognize the crucial means for their students to develop multiple skills and competencies that are important for the first year of university studies. In the following section, I have described the theoretical frameworks that were used to inform the present study.

2.3. Theoretical Frameworks Guiding the Study

First year of higher education is often for a time of tremendous development, including in the intellectual, social and psychological dimensions. The theories used to guide this study were student involvement and engagement, as both theories emphasize student learning and explain the process of enhancing student development. Student involvement theory provides a conception of the relationship between student involvement and learning. It argues that students are required to engage actively in their university environment in order to develop themselves. This theory was chosen as it focuses on the concept of student involvement as a whole rather than concentrating on any particular dimension of involvement. The student engagement theory extends the concept of student involvement and enables the impact on student success to be investigated from different domains of engagement. This theory was considered to be helpful in determining the factors that influence on student success. Details of each theory are introduced below, to demonstrate how the framework of this study was supported.

2.3.1 Student Involvement Theory

Alexander Astin developed the theory of student involvement based on the findings of longitudinal studies he conducted on the impact of higher education on student development (Astin, 1984). He was interested in how institutions develop students' talents, specifically the growth of intellectual development that makes positive change in their lives. Astin's theory of student involvement explains how desirable outcome(s) for higher education institutions are influenced by how students changed and developed as a result of being involved in activities in the high education institution, both inside and outside the classroom. The theory is expressed as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p.518), and students learn by becoming involved. *Involvement* plays a central role in student learning and development, on the assumption that if students are more involved with or committed to their study, they will achieve higher levels of success. For example, a highly involved student is one who devotes time and effort to studying, participates actively in extra-curricular activities, and/or interacts more frequently with teachers and peers, as opposed to an un-involved student,

who may only spend little time on studies, abstain from extra-curricular activities and have little contact with teachers and peers.

There were five basic postulates about involvement. Astin argued that it requires an investment of physical and psychological energy at different times. First, these occasions could be highly generalized (e.g. student experiences) or highly specific (e.g. working on an assignment). Second, involvement is continuous and the amount of energy involved varies across students at any given occasion or time. The same student could devote different levels of involvement in different occasions at different times. Third, involvement has both quantitative and qualitative dimensions. For example, the involvement in students' academic work can be measured quantitatively by the number of hours spent on studying, and qualitatively by how focused they are at the time of studying (e.g. do they only glance over the course notes while playing online games?). Fourth, there is a direct proportional relationship to the quantity and quality of students' involvement and their learning and personal development, i.e. what they gain from being involved or how they develop as a direct consequence of the extent to which they are involved (both qualitatively and quantitatively). Finally, the effectiveness of any educational policy or practice has a direct impact on the capacity of that particular policy or practice to increase student involvement. In other words, student performance is a result of effective educational policies or practices that can be correlated directly with their involvement in the activities in their institutions. These assumptions helped to amalgamate the principle of capturing the process of student development, which was useful in shaping and identifying the factors that influence student success in the second phase of the study.

The involvement theory emphasizes the physical or behavioural dimensions - "it is not so much what the individual thinks or feels, but what the individual does and how he or she behaves, that defines and identifies involvement" (p. 519). One of the challenges to this theory is the difficulties in measuring and assessing student's intellectual and personal development, as the development of these is multi-dimensional and can occur over a long period of time. Also, the theory does not address how much a student might be involved in order to achieve success; I would argue that a student who is highly involved in studying could be perceived as successful, compared with another student who is engaged actively in extra-curricular activities. Nevertheless, this theory presented an assumption of student learning relevant for this study and the principle of

capturing the process of student development allowed an investigation of the activities and involvement that students experienced in the university.

2.3.2 Student Engagement Theory

The theory of student engagement not only provides a considerable explanation in student learning and development, but also extends beyond the physical dimensions of involvement to include other dimensions such as psychological (e.g. students' sense of belonging) and institutional support. The concept of student engagement has attracted many studies to investigate different dimensions of student engagement and how they can influence student success. The historical origin of student engagement can be traced back to as early as the 1940s. Ralph Tyler (1949; 1959), an educational psychologist, investigated relationships between secondary school curricula and subsequent college success by recording the amount of time students spent on their studies and its effects on learning. Later in the 1960s, Robert Pace (1963; 1984) researched Tyler's work more fully and showed that the quality of students' effort put into the facilities and opportunities that higher education institutions provide was an essential factor influencing student success. Pace (1998) found that students who devoted more time and effort to educationally purposeful tasks (e.g. studying, participating extra-curricular activities, interacting with faculties and peers) tended to develop better personal skills and competencies from their college experience. Kuh, Kinzie, Buckley, Bridges, and Hayek (2006) also revealed that student engagement represents a key component of student success, including a wide range of indicators such as traditional measures of academic achievement, desirable student and personal development outcomes, student satisfaction and persistence. Nevertheless, engagement can be an antecedent to success outcomes. Bryson & Hardy (2010) described engagement as both a process and an outcome – the former being what institutions do to engage students, whereas an outcome is the student's behaviour of being engaged. A clear distinction would be to identify what is considered to be the process, i.e. a cluster of factors that influence student engagement, whereas the outcome is student engagement.

In recent years, quantifiable measures of learning behaviour and intrinsic measures of students have been included in the research on student engagement (Zepke,

2015). These measures have also been associated with student success and the quality of teaching and learning. For example, some researchers found that engagement was positively correlated with students' cognitive development such as critical thinking, resulting in student satisfaction, academic achievement and first-year retention (Bruinsma & Jansen, 2009; Hu & Kuh, 2002; Krause & Coates, 2008; Kuh, 2009; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pascarella, Seifert, & Blaich, 2010). Different types of engagement were also examined and some similar conclusions were reached about student success. For instance, Pike, Kuh, and Massa-McKinley (2008) found that engagement with peers and staff contributed positively to student's success and, therefore, should be incorporated into the curriculum. Webber, Krylow, and Zhang (2013) also showed that engagement in a variety of curricular and co-curricular activities influenced GPAs and students' perceptions of their overall academic experiences.

In an attempt to define student engagement, there has been a plethora of definitions in the literature. Some definitions associate engagement with participation, such as student's participation in curriculum and extra-curricular activities both inside and outside their classrooms, involvement in activities that influence high-quality learning, level of participation and intrinsic interest shown by students (Akey, 2006; Axelson & Flick, 2010; Harper & Quaye, 2009). Other definitions emphasize the linkage between engagement and energy, such as the time and resources students devote to activities for enhancing learning in university, or time and energy students devoted to educationally sound activities both inside and outside classrooms (Krause, 2005; Kuh, 2003). Some definitions focus on the relationship between engagement and connection, for example the connection between people and activities. This also includes experiences resulting from the interaction between individual students and the institution, or the process to empower students in shaping their learning experiences (Ainley, 2004; Little, Lock, Scesa & Williams, 2009; Ryan, 2005). Although many different terms have been used for "engagement", in a nutshell, it refers to the same concept, i.e. "students learn from what they do in college" (Pike & Kuh, 2005, p.186). This theory resonates with the theory of student involvement, except that student engagement theory is associated explicitly with student success, or recognized as being part of the success.

While student engagement has many aspects, the past literature in general has identified four relatively well-defined perspectives: behavioural, psychological, socio-cultural and holistic. The behavioural perspective has probably been the most widely accepted view of engagement in the higher education literature, which foregrounds student behaviour and teaching practices in educationally purposeful activities (Radloff & Coates, 2010). This perspective was rooted in Astin's theory of involvement for students in higher education institutions (McCormick et al., 2013). According to this theory, students learn by being involved and student involvement (physical and psychological energy invested in the college experience) is directly proportional to learning. This is based on the presumptions that students learn best from what they do, how they do it, or the activities in which they engage in higher education institutions.

The psychological perspective sees engagement as an individual psycho-social process that evolves over time. It has been particularly dominant in the school-related literature. Some researchers have defined it as a "student's psychological investment in and effort directed towards learning, understanding or mastering the knowledge skills or crafts" (Lamborn, Newmann, & Wehlage, 1992, p.12). This perspective relates to the affective dimension (e.g. how student feels) but different researchers may have different interpretations. Some have considered it as immediate emotions such as interest and enjoyment in the task (Furlong et al., 2003), while other have seen it as synonymous with attachment, predominantly whether students feel they belong (Libbey, 2004). The key limitation of the psychological perspective is the lack of definitions and differentiation between the dimensions. Jimerson, Campos, and Greif (2003) reviewed 45 articles and found that 31 did not define the terms explicitly. There is some overlap between different dimensions, for example effort often appears in both behavioural and cognitive measures. These problems of definitions have also led to inconsistencies in measurement, making the investigation difficult within this perspective (Kahu, 2013).

The socio-cultural perspective focuses on the impact of social and cultural contexts that affect student experiences. Researchers of this perspective have explored explanations for engagement and argued that socio-cultural factors play a key role in affecting how students engage. For example, Mann (2001) identified contextual factors in academic culture and disciplinary power, which made students feel "unfit" or disconnected from their higher education institutions. Thomas (2002) found that institution habitus, with certain types of social and cultural characteristics, benefit some

dominant social groups but lower the retention for minority groups. Sometimes, this perspective extends to wider socio-political contexts; McInnis (2001) described how changes in societal values and generational differences and market-driven changes in universities influence students, resulting in the decline of academic engagement. The socio-cultural perspective has been used often to investigate why students become engaged in or disengaged from higher education institutions and to offer insights into the institution's culture, and perhaps even the wider social and political dimensions of student engagement.

From the holistic perspective, student engagement is viewed as a combination of dimensions that "encompass the perceptions, expectations and experience of being a student" (Bryson & Hardy, 2011, p.1). The suggestion is that engagement should take place in a more dynamic continuum of different locations (e.g. classroom, institution, task), which cannot be measured simply by surveys. Multiple dimensions of engagement are investigated from this perspective and the framework that is commonly known, which is integrated widely into higher education practices, is the one developed for the National Survey of Student Engagement, NSSE (Kuh, 2001). The NSSE framework consists of five dimensions: level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment. Other researchers have also investigated student engagement from multiple dimensions. For example, Coates (2006) proposed a nine-dimension framework for a study of early-year students' engagement, adding to the NSSE framework the four dimensions of other teaching and learning components such teacher approachability, constructive teaching, active learning and beyond-class collaboration. Krause & Coates (2008) recognized the need to address first-year students' experiences and introduced a dimension on transition engagement. They proposed a total of seven dimensions of student engagement, focusing on first-year university studies. These dimensions included transition engagement (e.g. orientation programme), academic engagement (e.g. time spent on studying), peer engagement (e.g. time spent on studying with others), student-staff engagement, intellectual engagement (e.g. enjoying the intellectual challenge), online engagement (e.g. online discussion) and beyond-class engagement (e.g. liking for being on campus). Zepke, Leach, and Butler (2010) incorporated other intrinsic measures and socio-cultural aspects into student engagement and proposed six dimensions. These were motivation (e.g. student

feels competent to achieve success), transactional engagement with teachers, transactional engagement with peers, institutional support (e.g. institutions provide an environment conducive to learning), non-institutional support (e.g. students' family and friends assist with childcare) and active citizenship (e.g. students are able to live successfully in the world). A holistic approach was used to draw different perspectives of student engagement together, such as interaction with teachers from the behavioural perspective, academic challenge from the psychological perspective, and the effect of external factors in relation to the socio-cultural perspective.

The major drawback of this approach is the inability to distinguish between engagement and its antecedents (Christie et al., 2008), and there is some confusion between antecedents and consequences of student engagement. For example, in the model proposed by Zepke et al. (2010), the first five dimensions were "influencers" on student engagement while the last dimension, "active citizenship", was an outcome of it. The issues of poorly defined dimensions and categorization still exist in the engagement research. While it is clear that each perspective offers some useful insight into the concept of student engagement, each only tells part of the story. A more comprehensive understanding of engagement is essential in terms of definitions, categorizations and scope. If higher education institutions aim to investigate the influences of student engagement, a clear definition of each dimension is necessary.

To summarize, the two theories, involvement and engagement, provided this study with a foundation for understanding student learning and the process of development. The involvement theory set out a basic assumption about learning - "to learn by involving" while the engagement theory provided an understanding of different perspectives of student engagement. It was a useful guide in this study for the process of choosing predictors that would represent different perspectives of student engagement. For the purpose of this study it was necessary to utilize a holistic approach of student engagement that captured a wider perspectives of engagement when considering the influences that fit best with the context of Hong Kong, in an attempt to understand how first-year success can be enhanced during the first year of higher education.

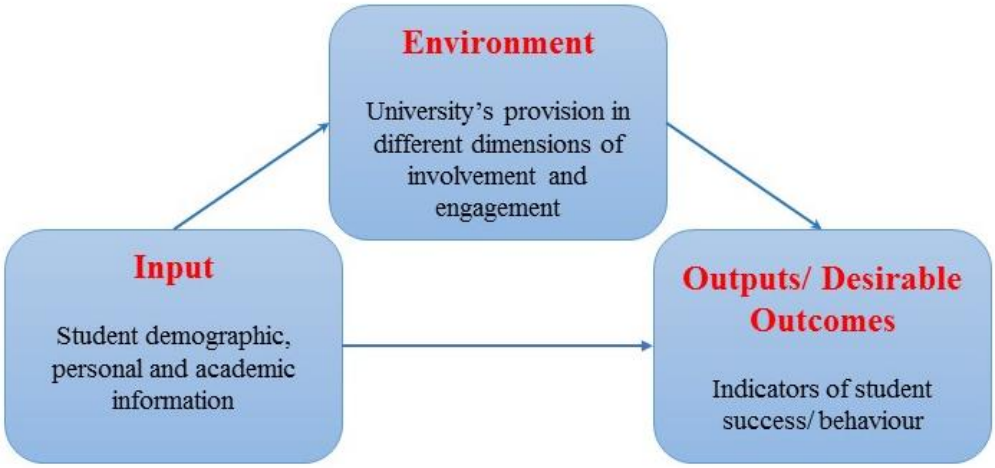
The following section explains how the concept of student involvement and engagement is portrayed in the process of student learning (i.e. predictors). In

particular, it considers how this study investigates student engagement as a process to influence the outcomes of first-year success, via the Input-Environment-Output framework (Astin, 1991).

2.3.3 The Input-Environment-Output Framework

Astin (1991)'s Input-Environment-Output (I-E-O) framework was adopted for this study, to illustrate the relationship between different types of engagement (as predictors) and first-year success (see Figure 2-1). Astin (1991) proposed that students come to university with a range of demographic, personal and academic characteristics, i.e. Input. These traits influence students' behaviour in engaging with different dimensions within their institutions. Their involvements are shaped by the experiences from a variety of curricular, extra-curricular programmes, and classroom and out-of-class and conditions, i.e. Environment. All of these dynamics happen within, and are themselves shaped by, students' interactions with different educational activities under the environment provided by the institution, i.e. student engagement in different dimensions of the university experience in the first year. The output of this framework can be conceptualized as the outcomes of students, i.e. the first-year success as defined in the present study.

Figure 2-1 The Input-Environment-Output framework



I-E-O Framework (Astin, 1991)

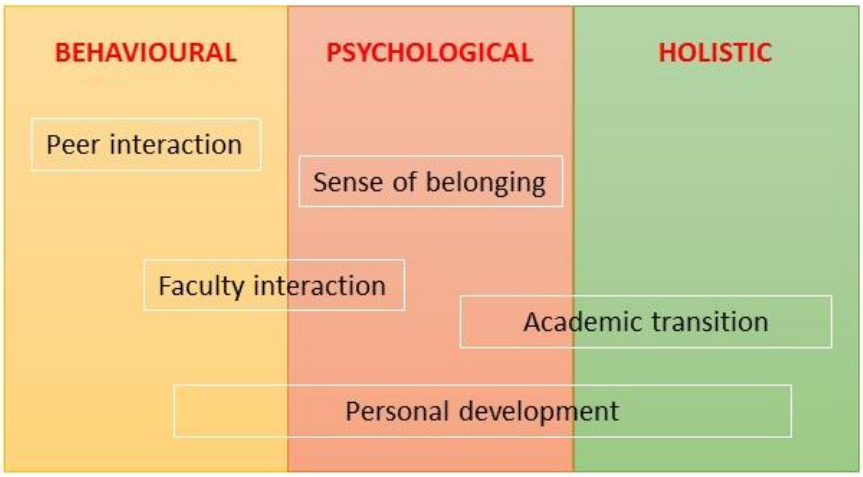
Although the I-E-O framework is generic, meaning it can be applied to different contexts, it guided this study in identifying the importance of different dimensions of student engagement in the process of driving first-year success. This framework was selected because it provided an opportunity for this study to explore the relationships between the Environment (i.e. university's provision for students to engage with the institution) and the Outcomes (i.e. first-year success), in addition to the role of students' demographic and personal information in leading to positive student outcomes.

While the first phase of the study was intended to define the Outputs under the I-E-O framework, the aim of the second phase was to explore different perspectives of student engagement in driving success. Thus, it was crucial to identify different types of engagement that would fit with the current context in facilitating first-year success. In next section, types of student engagement which have been found to be influential in the literature in leading student success are discussed.

2.4. Factors that Influence First-year Success

The involvement and engagement theories acknowledge the importance of student involvement in leading to success. Four major perspectives of student engagement were identified in the literature review, behavioural, psychological, socio-cultural and holistic, on which the predictors of this study were based. The following section of the literature review focuses on the five major driving forces that have been commonly recognized internationally, with high relevance to students' first-year experiences in the current context. The driving forces include student belonging, peer interaction, faculty interaction, academic transition, and personal and social development, which can be categorized conceptually into the behavioural, psychological, and holistic perspectives of student engagement (see Figure 2-2). The social-cultural dimension of engagement is not included because it is not part of the focus of this study. The following section discusses the predictors of success in each of the engagement perspectives.

Figure 2-2 My conceptual categorization of the predictors of success



2.4.1 Sense of Belonging

Sense of belonging can be categorized as the psychological perspective of student engagement, as it focuses more on individual psycho-social processes. It refers to a student's sense of connectedness to the institution and how students feel themselves to be an integral part of the institution (Strayhorn, 2012). It is the subjective sense of affiliation and identification with the university community, which can reflect a student's integration into the university system (Hoffman et al., 2002). Hurtado et al. (2015) described sense of belonging as the "psychological dimension of student integration" (p. 62) that leads to attachment and connectedness to the university community, as opposed to the behavioural aspects of integration, which involve student engagement in both academic and social activities. In other words, the greater a student's sense of belonging to the university, the greater his or her commitment to (or satisfaction with) that university and the more likely he or she will be to stay in that institution. Many researchers have recognized the importance of developing students' sense of belonging, particularly for first-year students, since this is always a key outcome of the student experience.

Studies have shown consistently that students with a sense of belonging are likely to achieve valuable educational outcomes. For example, those with a good sense of belonging are likely to be motivated with academic studies, positive in psychological adjustment (e.g. more confident in self-competence, higher self-worth), and persistent with their undergraduate studies (Freeman, Anderman, & Jensen, 2007; Hausmann,

Schofield, & Woods, 2007; Morrow & Ackermann, 2012; O'Keeffe, 2013; Pittman & Richmond, 2008; Strayhorn, 2012). On the other hand, considerable work has focused on how to enhance students' belonging. There is evidence that good interaction with faculty staff, peers and department advisers, and good relationships with professors and mentors can help to build a student's sense of belonging (Freeman et al., 2007; Soria, 2012). This emphasis on the interpersonal dimension could also include the provision of guidance and feedback about academic matters from faculty staff or peer counterparts (Hoffman et al., 2002). A good social support system, friendships and social acceptance by peers have all been found to be related positively to a sense of belonging (Hausmann et al., 2007; Pittman & Richmond, 2008; Wilcox et al., 2005). These studies have repeatedly acknowledged the importance of cultivating a sense of belonging for students, identifying this as one crucial element in enhancing student success in higher education.

More recently, the dimension of students' social and academic sense of belonging has been included in the formulation of institutional policies for predicting retention of first-year students (e.g. Davis et al., 2019). This highlights the significance of a sense of belonging and the need for early involvement with students in academic and social activities. These concepts resonate with the mission of the university in this study, one of its major objectives being "to foster a University community in which all members can excel in their aspirations with a strong sense of belonging and pride" (The Hong Kong Polytechnic University, 2019c, p.2). In particular, the university acknowledges the need to create a supportive, caring and welcoming environment to build a sense of community that cultivates students' feelings of connectedness with and acceptance by the institution. As a result, it is important to understand the role of sense of belonging on success for first-year students.

2.4.2 Peer Interaction

Peer interaction is another very important factor that drives student success, as it is a dimension that occupies a significant amount of students' university lives. The literature about peer interaction mostly emphasizes student behaviours relating to the interactions among their peer counterparts. Astin's (1993) theory of involvement found that the relationship with peers and faculty is "the single most potent source of

influence on growth and development during the undergraduate years" (p. 398) and that the amount of peer interaction has far-reaching effects on almost all areas of student learning. He conceptualized student interaction as discussing course materials, working on group projects, participating in social clubs or extra-curricular activities, belonging to social communities or organizations, joining campus protests, or spending time socializing with other fellow students. A peer group usually consists of individuals who share a common interest, and are of comparable or equal status so that members can affiliate, identify, and be accepted within the group (Johnson, 2007).

Some studies have investigated how peer interaction can affect student success in the context of higher education (Barefoot, 2000; Geall, 2000). For example, Geall (2000) identified students' interactions (including support from friends, fellow students and family) as the most important experience for first-year Hong Kong students. Barefoot (2000) highlighted the importance of interaction among students and discussed how high-impact programmes can facilitate the kind of interaction deemed necessary for affiliation and bonding. Tinto (1987, 1993) delineated two distinct areas of student integration – academic and social – and summed up that interaction between students is an important aspect of social integration. Students who are socially and academically integrated into their first-year studies tend to return to their institutions and to be less likely to drop out (Braxton & Hirschy, 2004; Flynn, 2014; Wilcox et al., 2005; Yorke & Longden, 2008). Peer interaction can also influence many important attributes of student development, such as academic and leadership development, growth in critical thinking skills, problem-solving skills, cultural awareness and satisfaction (Antonio, 2001; Astin, 1993; Woosley & Miller, 2009). Peer interaction has been found to associate with student involvement and sense of belonging (Krause & Coates, 2008; Kuh, 2005; Strayhorn, 2008; Thomas, 2012). Studies in general have shown that students who are more engaged in purposeful activities (e.g. studying with peers, participating in extra-curricular activities or social events) tend to develop a sense of belonging to the institution, which can lead to better personal development and increase their likelihood of persisting in higher education (O'Keeffe, 2013; Pike & Kuh, 2005; Strayhorn, 2008). Findings from these studies demonstrated the interconnected nature of the predictors and students' positive outcomes.

With research having shown the benefits of peer interaction, it has been suggested that the effort required by higher education institutions to facilitate peer

interaction is remarkably important. For example, interactions with diverse peers have been demonstrated to foster cognitive growth in intellectual skills, social ability, civic interest and predicted learning; this certainly requires active mediation by institutions and mutual understanding of social differences among groups (Chang, Astin, & Kim, 2004; Gurin at al., 2002; Hu & Kuh, 2002; Johnson et al., 2007; Lundberg, 2012; Umbach & Kuh, 2006). While the importance of peer interaction was ascertained through these studies, it was also a key part of this study's investigation to understand how the concept of peer interaction influences first-year success. If peer interaction plays a significant role in facilitating student success, universities need to explore ways to encourage their students to engage actively with their peers to allow more learning to take place.

2.4.3 Faculty Interaction

Many researchers have recognized the importance of interaction between students and faculty to facilitate student success in higher education (Komarraju, Musulkin, & Bhattacharya, 2010; Pascarella & Terenzini, 2005; Pintrich, 2004; Romsa, Bremer, & Lewis, 2017). Student-faculty interaction is particularly useful to assist students in transitioning to university because it helps to educate students about the institutional culture and values, assist them to form attachments to the campus and develop important outcomes (Pascarella & Terenzini, 2005). Student-faculty interaction has also been found to have great impact and special meaning for first-year university students, as strong predictors of their overall satisfaction with the institution (Delaney, 2008). There is evidence that student satisfaction is associated closely with student-faculty interaction, with students reporting higher levels of satisfaction with their university experiences if their interactions with faculty increased (Endo & Harpel, 1982; Romsa, Bremer, & Lewis, 2017). Furthermore, there have been reports that students who have more frequent interactions with faculty are more likely to persist at the university (Krause & Coates, 2008; Morrow & Ackermann, 2012; Pascarella & Terenzini, 2005; Starke, Harth, & Sirianni, 2001). Findings from these studies have acknowledged the importance of student-faculty interactions in higher education in facilitating positive outcomes for students.

Most of the literature on faculty interaction has focused on the frequency and quality of interactions, indicating that this predictor can be categorized under both behavioural and psychological perspectives in student engagement. Students have been shown to benefit from interactions with faculty in both formal and informal settings, i.e. in-class and out-of-class (Heng, 2014; Pascarella & Terenzini, 2005; Upcraft et al., 2004; Young-Jones, Burt, Dixon, & Hawthorne, 2013). For example, students who perceived their faculty members as being approachable, respectful and available for interaction outside the classroom were found to be more likely to report being confident in their academic skills, more engaged and actively involved in learning, found learning enjoyable and stimulating, and were motivated, both intrinsically and extrinsically (Cokley, 2000; Komarraju et al., 2010; Thompson, 2001). Informal student-faculty interactions have been found to have positive impacts on academic performance, intellectual and personal development (Endo & Harpel, 1982; Lamport, 1993; Pascarella & Terenzini, 2005). Although it is common to associate student-faculty interactions in class, these studies indicated that interactions with faculty members are remarkably important, in a range of circumstances (i.e. in-class and out-of-class), hence effort should be made to support student-faculty interactions at both faculty and institution levels.

While several studies have investigated the benefits of frequent faculty interactions, others have examined the impact of the quality of interactions between students and faculty (Anaya & Cole, 2001; Eimers, 2001; Rugutt & Chemosit, 2009). Measures of quality have commonly included students' perceptions and satisfaction with faculty interactions. For example, Anaya and Cole (2001) showed that the quality of student-faculty relationships was correlated positively with student academic performance, and found to be the strongest predictor of academic outcomes (Lundberg & Schreiner, 2004). Rosenthal et al. (2000) revealed that students were more likely to feel satisfied with their university lives and aspired to go further in their careers if they had close relationships with faculty members. Moreover, students' overall satisfaction with the university experience increased with the quality of student-faculty relations (Delaney, 2008; Eimers, 2001). Findings in the literature clearly suggest that both the quantity of student-faculty interactions and the quality of faculty relations are crucial in facilitating student learning and development in the higher education setting.

The content of student-faculty interactions is also one of the common topics in the literature. Academic-related topics formed the major content of student-faculty interaction (e.g. Anaya & Cole, 2001). Cotten and Wilson (2006) found that the interaction occurred generally when a student had difficulty with a course or needed help with a specific assignment, even if the contacts were rather infrequent. Kuh and Hu (2001) shared similar findings by studying the different types of student-faculty interaction. They found that information seeking or clarification of course-related topics were the most frequent types of interaction, followed by discussions about career plans or personal problems, and collaborating on a research project with that faculty member. Umbach and Wawrzynski (2005) recognized that frequent course-related faculty interactions led to higher levels of student learning and engagement, although they found no association between student-faculty interaction and student satisfaction. All of these findings shed light on the impact of interactions among students and faculties, and have implications for higher education institutions when examining the need to strengthen both quality and quantity of interactions in order to enhance students' learning experiences with their university studies. In particular, there is a recent trend for the higher education institutions in Hong Kong to introduce more online elements by replacing traditional face-to-face classes. An understanding of how students perceive student-faculty interaction in relation to the first-year success is therefore crucial.

2.4.4 Transition to University Studies

The transition from high school to university can put significant demands on many first-year students as they are often required to develop new learning skills which can differ substantially from their secondary school education. For example, first-year students are often overwhelmed by the large amounts of reading they need to complete in a relatively short period of time (Kantanis, 2000). Many have difficulties with reading and writing comprehension, adjusting to a wide range of teaching styles, assessment methods and coping with academic demands during the transition (Beder, 1997; Krause, 2001; Mudhovozi, 2012; Nevill & Rhodes, 2004; Pessoa, Miller, & Kaufer, 2014). University transition, in general, refers to students' adjustment to university life, including academic, social, and psychological dimensions. Successful transition is typically associated with student retention or persistence (Davidson &

Wilson, 2013; Hurtado, Carter, & Spuler, 1996; Kelly, Kendrick, Newgent, & Lucas, 2007), suggesting that transition is an essential element for any first-year students at the commencement of their higher education. Clearly, university transition incorporates an array of variables that allows students to adapt and transition themselves into higher education. These variables can be facilitated by student engagement of various kinds. Specifically, these types of engagement could involve multiple dimensions that incorporate student perceptions, motivation, expectations and experiences of dynamic interactions within the institution, i.e. encompassing the holistic perspective of engagement.

University transition can be enhanced by students' academic and social integration. Tinto (1975; 1987; 1993) proposed that students' persistence and growth depends on the degree of successful integration into the institution's academic and social structure. Lack of academic integration can cause dropping out or withdrawal from university (DeBerard et al., 2004; McGrath & Braunstein, 1997; Stewart, Lim, & Kim, 2015). Similarly, social integration is associated with students' satisfaction and sense of belonging, which are crucial to their transition (Hillman, 2005; Hoffman et al., 2002; Hurtado & Carter, 1997). The development of skills and competencies such as emotional and social competencies, communication and critical thinking, have also been found to play an important role in successful transition from high school to university (Parker, Duffy, Wood, Bond, & Hogan, 2005; Schutte & Malouff, 2002). In addition, some research has shown that successful transition is allied closely to student engagement, which could impact on student success. For example, the more students engaged in academic related activities (e.g. spending time on studying, working on group projects), the higher the chance they would succeed or at least remain in the university (Kuh et al., 2008; Krause & Coates, 2008; Pascarella & Terenzini, 2005; Tinto, 2006). Other factors, such as quality of learning experiences, student expectations, finances, lifestyle, and employment, could also impact on student transition in association with retention or withdrawal (e.g. Harrison, 2006; Lobo, 2012; Yorke & Longden, 2008). Findings from these studies have suggested that academic, social and personal adjustment plays a crucial role in leading student success, and higher education institutions are required to pay attention to supporting students in their university transition, particularly in acquiring skills and competencies for their university studies.

To facilitate first-year student transition, higher education institutions have incorporated carefully designed first-year programmes (e.g. freshman seminar, service learning, and academic advising). There is evidence that these can lead to positive outcomes, particularly in academic performance, persistence and retention (e.g. Bringle et al., 2010; Drake, 2011; Goodman, 2006; Jamelske, 2009). According to Schrader and Brown (2008), successful first-year experience programmes should directed towards the skills and knowledge that enable students to adjust to their studies and be successful in the academic and social dimensions of university life. Reason et al. (2007) showed that the development of students' personal, social and academic competencies was the result of effort on the part of the institutions. Their study identified a connection between students' sense of support by their institutions and self-reported gains in social and personal competence levels. These findings suggested that it is a shared responsibility between all parties within higher education institutions to enhance smooth transition. In particular, institution administrators and faculty staff have a role to provide the necessary conditions and opportunities for students to develop these new sets of skills when they first start their tertiary education.

In relation to this study, PolyU offers a range of first-year programmes to promote successful university transition. These programmes include orientation sessions organized at both university and faculty levels, study-skills courses, peer-mentoring programmes, workshops on writing and speaking effectively and academic integrity, freshman seminars, and academic advising. The major objective of these programmes is to equip first-year students with a range of skills for university transitioning, with a primary focus on academic preparation and to facilitate better adjustment to the university studies. Currently, there is a lack of information on how well first-year students are transitioning into their first-year studies. Given the importance of university transition, there is a need to explore the impact of this influence in driving student success.

2.4.5 Personal and Social Development

Personal and social development are important elements related to student learning during the first year of higher education, when intensive learning takes place (Pascarella & Terenzini, 2005). In particular, personal and social competence have been

acknowledged as first-year outcomes (e.g. Kuh, 2001; Bitzer, 2005). They include generic skills competence in critical thinking, effective communication, life-long learning, intercultural effectiveness, cognitive and interpersonal skills, social skills and leadership skills, approach to learning, solving complex real-world problems and independent learning (e.g. Haber-Curran & Stewart, 2015; Pascarella et al., 2010; Pritchard & Wilson, 2003; Strayhorn, 2008b; Terenzini et al., 2001). Other researchers have referred to personal development as an understanding of one's own self and diverse others, developing personal values and ethics, personal and educational goals, social responsibility and personal well-being (e.g. Filkins & Doyle, 2002; Reason et al., 2007; Zhao & Kuh, 2004). While different outcomes have been used to recognize personal and social competencies, these studies have highlighted the importance of personal growth and development in the first year of university, which can be facilitated through different dimensions of student engagement. In particular, these dimensions of engagement tap into different perspectives, including behavioural, psychological and holistic engagement. For example, Reason et al. (2007) found that the student perception of institutional support (i.e. holistic perspectives of engagement) was the strongest predictor of gains in social and personal development in first-year students. Zhao and Kuh (2004) found that more than 38,000 first-year students benefited from the impact of learning community participation (i.e. behaviour perspective) by reporting higher gains in social and personal development. Field et al. (2014) explained how independent learning skills and self-determination helped students overcome psychological distress (i.e. psychological perspective), which would be useful for university transition. Findings from these studies demonstrated the importance and benefits of engaging students in different dimensions of university life in order to enhance personal and social development.

A large volume of research has shown that developments in personal and social competence could be shaped by in-class activities. Noble, Flynn, Lee, and Hilton, (2007) illustrated how a high-impact first-year programme developed students' personal and social competencies, which ultimately improved their academic performance and retention in university. Pascarella and Terenzini (2005) revealed that the courses that students took, their experience within the courses and the academic majors they chose influenced the gains of personal and social development. Meaningful academic activities can help the development of personal and intellectual competencies (Laird et

al., 2005). This study showed that students who participated in “deep learning” activities in a subject, i.e. one that required higher-order thinking skills, integration of knowledge across academic area and more reflection on the learning process, reported greater personal and intellectual development than the students who were not exposed to such activities. Similarly, Zhao and Kuh (2004) showed that students who engaged in deeper levels of academic aspects through a learning community had greater development in the social and personal domains. Other studies have shown that the development of personal skills like communication, leadership and critical thinking contributed to better academic performance and even retention (Ghazivakili et al., 2014; Robbins et al., 2004). Thus, higher education institutions play a crucial role in facilitating students’ personal and social competencies through activities embedded in the undergraduate curriculum.

The whole concept of personal and social development is prevalent in the context of the university in this study, which aims to develop all-round students, with a range of competencies such as critical thinking, effective communication, problem solving, leadership, and social responsibility life-long learning upon graduation. Because the university emphasizes these developments as key graduate attributes at the institution level, and the curriculum is designed to promote these developments, it is important to understand how students perceive their gains in personal and social development affect their success.

2.4.6 Demographic Characteristics

Students’ demographic characteristics (e.g. gender, age, race, university entrance scores) have been studied in the literature on first-year university success, but mixed results were reported with regard to academic achievement, retention and persistence, learning outcomes or first-year transition (e.g. Choy, 2002; Eisenberg et al., 2013; McInnis et al., 1995; Olani, 2009).

With regard to academic achievement, some studies have suggested that male students have advantages in some subjects such as economics (e.g. Anderson, Benjamin, & Fuss, 1994). Some, however, found no gender effects (e.g. Rhine, 1989), and others showed the opposite results, that female students had the advantage in the same subjects (e.g. Williams, Waldauer, & Duggal, 1992). Contradictory findings have

been found on the effect of age as well. While Clark and Ramsay (1990) showed a negative association between age and academic achievement, Olani (2009) found no gender effect, and McInnis et al. (1995) found that mature students with a clearer career orientation tended to achieve better academic outcomes. Nevertheless, academic performance on university entrance scores, matriculation scores or previous grades seem to be the most influential factors contributing to first-year academic performance (Gifford et al., 2006; McKenzie, Gow, & Schweitzer, 2004; Mills et al., 2009; Olani, 2009) that, in turn, also influenced persistence (Astin, 1997; Tross, Harper, Osher, & Kneidinger, 2000).

Similarly, some studies of the association between student demographic variables and retention have shown inconclusive results (e.g. Peltier, Laden, & Matranga, 2000; Pritchard & Wilson, 2003). For example, Tinto (1987) found that gender was related significantly to student retention. In particular, female students were more likely to persist than male students (Peltier et al., 2000) and older students had higher first-year attrition rates (Choy, 2002). However, other studies found that demographic variables including age, gender, high school, GPA, university entrance scores had no effect on either retention or intent to drop out (Pritchard & Wilson, 2003; Reason, 2001). Findings from these studies suggested that socio-demographic factors tended to have indirect effects on successful retention or persistence outcomes (Pascarella & Chapman, 1983). On the other hand, a large number of studies revealed that gender played a role in a wide range of first-year experiences such as perception of social support, academic and psychological stress, interpersonal relationships with friends and family, self-esteem and it can predict university adjustment (Eisenberg et al., 2013; Friedlander, Reid, Shupak, & Cribbie, 2007; Rayle & Chung, 2007; Sand, Robinson Kurpius, & Dixon Rayle, 2004). An examination of students' social-demographic features alerted scholars and educators to pay more attention to the increasing diversity of student profiles in higher education nowadays due to changes in student profiles and widening participation (Shah et al., 2015). In this regard, students' demographic factors (e.g. gender, age) was considered in the investigation of student success from different dimensions of the first-year experience in this study.

2.5. Summary

This chapter has provided an overview of different definitions of first-year success and common measures used in the literature. While common definitions of student success have emphasized retention or persistence, a region like Hong Kong, or many other Asian countries with a predominance of low dropout or high retention rates, requires different definitions and measures. This set the focus for the first phase of the present study – understanding the definitions of first-year success. The chosen theories informed this research by depicting the important concepts of student involvement and engagement which are the means toward the end, i.e. student success. However, these theories do not postulate specific factors that influence success, or suggest that the factors or predictors should be contextualized. The literature on common predictors of first-year success has provided an understanding of how different aspects or constructs of the first-year experience can drive student success. This helped to frame the second phase of the study - identifying factors that influence first-year success.

In next chapter, I will discuss the methodological approaches chosen for this study, with an explanation of why a two-stage exploratory mixed-method research was considered to be appropriate.

Chapter 3 Research Methodology

In any research design, there are several crucial elements that guide the researcher in constructing the inquiry. These elements are the philosophical position of the researcher, the choice of research methodology (strategy) and the methods of data collection and analysis (Creswell, 2013). Grix (2010) described these elements as directional, forming the building blocks of a research design. This chapter examines these elements critically and illustrates how the philosophical assumptions guided the selection of methods chosen for the present study. Section **3.1** examines the researcher's philosophical position of pragmatism and the rationale for being in this stance. Section **3.2** explains the research strategy (i.e. mixed methods using quantitative and qualitative approaches) employed in the study, and justifies the choice of the two-stage sequential exploratory mixed-method approach. An overview of the research design is presented to show how this approach is implemented in each phase of the study. Due to the nature and sequence of the design, details of the methods and data collection processes for each phase are presented in subsequent chapters (i.e. Chapter **4** & **5**).

3.1 Philosophical Position of the Researcher

In the journey of conducting this thesis, I gradually came to understand the importance of my own philosophical position as a researcher. This position shaped my belief about the nature of knowledge (ontology) and drove the way my inquiry was conducted (epistemology) (Creswell, 2013), all of which guided the selection of the methodology for my study (Blaikie, 2009; Lincoln & Guba, 1985; Lincoln, Lynham, & Guba, 2011).

For a long time, there has been a great deal of debate about the researcher's philosophical position (paradigmatic stance), with two main streams represented in the literature. The first stream is the 'incompatibility thesis' (Howe, 1988), arguing that researchers must restrain themselves to a single paradigmatic stance, following strictly either positivism/post-positivism or interpretivism, and that either quantitative or qualitative approaches associated with that paradigm should be adopted. Positivism contends that there is a single reality and researcher is considered independently and objective using quantitative analysis to identify causal relationships (Firestone, 1987).

Interpretivism sought human experience and interpretation in understanding complex and multiple realities (Schwandt, 2000), and the researcher is subjective with the focus on seeking deeper understanding of what is happening with a smaller sample (Guba & Lincoln, 1988). Although the qualitative paradigm is receiving greater attention and is sometimes described as the naturalistic inquiry, post-positive, constructivist or interpretative approaches (Creswell, 2003), researchers under this stream are forced to choose between positivist scientific model of research associated with quantitative methods and interpretive model associated with qualitative ones (Howe, 1985).

On the other hand, the 'compatibility thesis' (Tashakkori & Teddlie, 1998) argues that it is possible to adopt different paradigmatic stances that allow the inquiry to be constructed, and that the nature of research questions, problems and circumstances should dictate the researcher's paradigmatic stance. Unlike positivists and constructivists, pragmatists (e.g. Dewey) are "anti-dualists" (Rorty, 1999) in that they are not committed to any single system of philosophy or view of reality. Instead, they believe researchers can be free of mental and practical constrains (Mertens, 2014), and allow themselves to use all approaches necessary to understand and answer the research problems rather than utilizing a forced dichotomy between positivism and interpretivism (Creswell & Clark, 2007) that confine them to choosing methods within the respective paradigms.

Pragmatism advocates the use of mixed methods in research, "sidesteps the contentious issues of truth and reality" (Feilzer, 2010), and focuses on the practicality (i.e. 'what works') and the consequences of the research. It is open to empirical inquiry that promotes solving practical problems in the real world (Rorty, 1999) and is driven by anticipated actions, situations and consequences, and concerns with applications and solutions to problems (Patton, 1990). This study aimed to explore definitions of student success' and the driving forces behind it; the study was situated in a context where using the typical measures of student success, i.e. retention, was not relevant. Thus, there is a need to (re)define student success and understand how these definitions can be influenced by different aspects of the first-year experience in order to allow higher education institutions to support first-year students to be successful. Creswell (2003) defined a pragmatist stance as:

> *"…one in which the researchers tends to base knowledge claims on pragmatic grounds (e.g., consequence oriented, problem-centred, and pluralistic). It employs strategies of enquiry that involve collecting data either simultaneously or sequentially to best understand research problems…The data collection also involves gathering both numeric information (e.g. on instruments) as well as text information (e.g. on interviews) so that the final database represents both quantitative and qualitative information."* (p. 18)

Pragmatism formed the guiding principle of this study. The dictatorship of problems was the underpinning philosophy of pragmatism in determining the methodology and methods (Tashakkori & Teddlie, 1998). This philosophy advocates "a need-based" approach to research method in understanding the consequence of the problems in the real world (R. B. Johnson & Onwuegbuzie, 2004). As a researcher, I see my epistemological position as not being limited to any one system of philosophy and reality, but more importantly as a pragmatist, I see truth as what works at a particular time, which is not based on strict dualism between the mind and a reality completely independent of the mind. Thus, I looked at the "what" and "how" to research based on the research questions and the intended consequences (Creswell, 2003). This allowed a free choice of the research methods, techniques and procedures that best met the research needs and purposes. The most appropriate research methods were chosen to ensure a suitable fit with the research questions.

Creswell's (2003) definition of pragmatism provides the principles to illustrate the pragmatist principles of this study. First, this research was problem-centred, as it sought to understand the meaning of first-year success in higher education and its disposition form the students' perspective. As has been explained earlier in this thesis, Hong Kong government-funded universities have almost 100% retention rate, which means that the literature on student success in higher education is less relevant or useful since most studies have emphasized retention, attrition, or withdrawal. Since the nature of students' first-year success in Hong Kong higher education is unclear, there was a need to identify and develop a common definition that would address this gap.

Second, this study sought both subjective and objective views based on the nature of the three research questions. For example, the first phase of the study sought

explanation of students' definitions of success in tertiary education, which was then used to inform the second phase, to identify factors that influenced the defined student success. Using this sequential mixed design, different methods were needed to inform and supplement each other, which also required the adoption of different research strategies (Teddlie & Tashakkori, 2009). Doing this allowed not only for an understanding of students' views of first-year success in higher education to be obtained, but more importantly the identification of the predictors of success in the Hong Kong context.

Third, the two-phase nature of the study meant that it was consequence-oriented. The findings observed from phase one were used as the central variables (i.e. dependent variables) for investigation during the second phase.

Finally, this study was pluralistic and progressive in that it sought understanding about different aspects of first-year experiences, and helped to resolve current difficulties and "progress" toward a better or ultimate direction (Green et al., 2012). Since the primary objective was to investigate multi-facets of the student experience that influence first-year success, it required an in-depth understanding of students' perceptions of success, and necessitated that the impact of the factors be generalizable to a wider population. The sole use of either qualitative or quantitative approaches would not have been appropriate for the research methodology. Therefore, a mixed-method approach was used. Focus groups were utilised to collect students' views subjectively and a survey was employed to quantify the impact of the factors found to influence first-year success objectively.

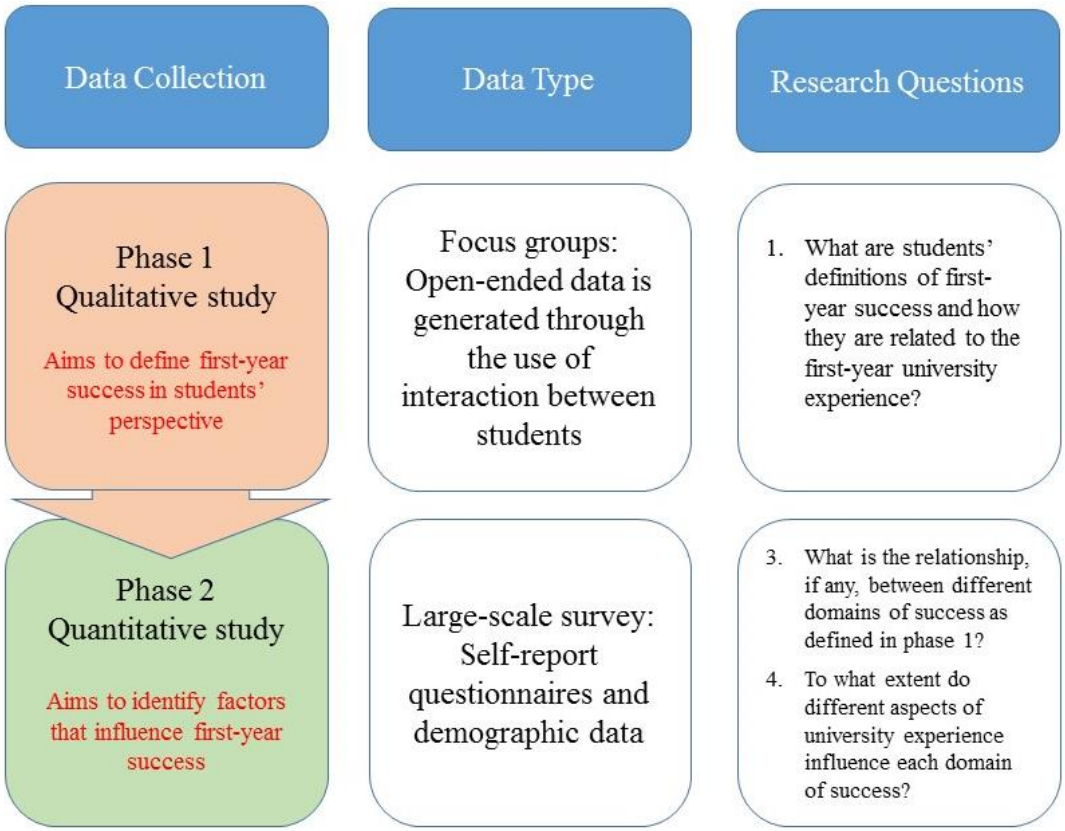
3.2 Research Strategy – An Exploratory Sequential Mixed-Method Design

For the reasons explained above, an exploratory sequential design (Creswell & Clark, 2007) was used for this study. In this two-phase design, the qualitative component preceded the quantitative element. This design was useful for explorations of new phenomena (Cabrera, 2011) or the generation of new variables (Creswell & Clark, 2007; 2017). Particularly, the first phase of the study ascertained definitions of student success, which led to the identification of variables to be investigated in the second phase of the study. According to Creswell and Clark (2017), when the variables

that need to be measured are unknown to the researcher, it is appropriate to explore qualitatively to seek an understanding of the variables, and then follow up with a quantitative study to generalize and test what was learned from the exploration. One advantage of this design was that the first phase allowed an in-depth understanding of student success to be developed, in an un-structured and open-ended manner. This helped to inform the design of the survey questions for the self-reported questionnaire in the second phase. A further advantage of the mixed-method design is that it combined the strengths of both qualitative and quantitative research in a single study (Johnson & Onwuegbuzie, 2004) and compensated for the weaknesses of each method . The use of focus groups is suitable for seeking understanding and descriptions of people's personal experiences of phenomena, which are not possible to collect via the quantitative approach (Brewer & Hunter, 1989; Johnson & Christensen, 2008), while the large-scale survey data are useful for studying a large numbers of people's views and allowing quantitative predictions to be made (Johnson & Onwuegbuzie, 2004).

The quantitative part had greater scope (it covered a large number of first-year students in one of the largest student populated government-funded university), which was acknowledged in the interpretation of results and consideration of the study's implications. A summary of the sequential exploratory design of the mixed-method approach adopted in this study is displayed in Figure 3-1.

Figure 3-1 Sequential exploratory design of mixed-method approach



To provide a clear picture of this sequential design, details of the methods used and data collection processes in each phase are presented in Chapter **4**, while the respective findings are discussed in Chapter **5**.

Chapter 4 Research Process and Methods

This chapter provides a detailed account of the research process and methods used in this mixed-method design. It begins with the data collection process and the recruitment of the student participants in Phase 1 – student focus groups, followed by an explanation of data analysis and ethical considerations. The second part of this chapter, phase 2 – a large-scale student survey, describes the choice of the research design and methods: the population and sample, survey instrument and data collection procedures. The process on data analysis and considerations of ethical issues are also presented.

4.1 Phase 1 – Student Focus Groups

In the first phase of the study, I attempted to understand students' definitions of first-year success in relation to different aspects of their first-year university experience. The primary focus for this phase was to explore and discover the meaning of success from the students' perspectives. As explained in Chapter 3, a qualitative approach was deemed appropriate for this part of the data collection as it allowed an in-depth investigation into richer contextual phenomena from the participants (Creswell, 2013; Yin, 1994). This following section focuses on the method of data collection and analysis, with some considerations of ethical issues.

4.1.1 Data Collection

To allow time for students to have experienced the majority of the first year of university life, the data collection for this phase took place just before the end of the first year of undergraduate studies. In particular, this study emphasized the first-year experience as a whole rather than focusing on a specific period of time, e.g. early experiences in the first few weeks. A purposeful sampling technique was employed in this phase to select participants who were able to provide the necessary information (Bernard, 2011). The goal was to capture the views of students from a wide range of faculties, to generate a diversity of responses and definitions of first-year success that were not structured by disciplines (Patton, 1990). A first-year faculty-based course,

called Introduction to Psychology, was chosen for the recruitment of the focus groups' participants. This course was an open-to-all first-level subject, and was one of the first-year subjects in the compulsory scheme (i.e. General University Requirement) under the four-year undergraduate curriculum. On average, over 1200 students from all disciplines registered in this subject each year. This course was chosen due to the large number of first-year student enrolments and the diversity of study disciplines represented by the students enrolled in it. As the participation was voluntary, there was a possibility that the sample may have been skewed towards particular study disciplines. However, the final composition of our student sample showed that students came from multiple disciplines, as can be seen in the Appendix 1.

Three focus groups were conducted, with a total of 31 participating first-year students. In the process of recruiting the participants for the focus groups, consensus was sought among the teaching team, from which a student list of this first-level course was obtained. Email invitations were sent to all first-year students via the university's learning management system, together with information about the purpose and the process of the study, and participants' right to withdraw from their involvement. The participation was completely voluntary; any students who were interested in this study could sign up freely via a website. A list of timeslot options was given. Over-recruitment was generated, with up to 15 students enrolled in each group to allow attrition such as "no shows" (Greenbaum, 1999). The students were able to change their preferred timeslots freely, as long as the quota for each group was not filled. Reminders were sent to the students a day before the focus group study commenced. A detailed copy of the email invitation, reminder and summary of the project are shown in Appendix 2.

The Participants

The target participants chosen for this phase of the study were all first-year students, enrolled in a four-year bachelor programme in the current UGC-funded University in Hong Kong. A total of 31 students participated in this qualitative phase. They were aged between 18 and 22, and included both local Hong Kong Chinese and non-local students (23 local vs. 8 non-local). Given the nature of the subject from which the participants were recruited, the profile included multiple disciplines (e.g. business,

science, humanities etc.). This enabled different students' views and opinions to be captured to represent the population of first-year students in the university. A profile of each participating student in this phase is presented in the Appendix 1. The only exclusion criterion for the participants was that they could not be aged below 18, although most first-year students are over 18 years old. The major reason for this exclusion was the practical concern about the complexity of gaining parents/guidance's consensus (please refer to ethic application at the University of Bristol under the section of "18. Age of participants" in Appendix 3). In the process of recruiting the student participants of this study, consideration was given to grouping the participating students into either local Hong Kong Chinese or non-local for two reasons. First, it related to the language used in the focus group. Cantonese was used for the local Hong Kong Chinese group as this is the Chinese dialect commonly used in Hong Kong, while English was used for the non-local group since it is the common language of instruction at this university. Second, many of the non-local students would have arrived Hong Kong just before commencing their first-year studies. Thus, they may have had other common experiences related to arriving in a new place, such as getting used to the food and places in Hong Kong. Nevertheless, another practical consideration was the students' availability for attending the focus groups, due to their academic timetables. Ultimately, it was almost impossible to avoid time-table clashes. For this reason, the students were not allocated to specific groups, rather they were able to choose freely the timeslots for the focus groups of their preferences.

The Focus Groups

Student focus groups were chosen in this qualitative phase to collect the students' opinions and views on the definitions and meanings of first-year success. According to Creswell and Clark (2007), a focus group has an interactive nature, which is particularly useful in generating data by gathering a group of people with particular types of characteristics (Morgan & Krueger, 1993). The primary aim of this phase was to explore students' perceptions of first-year success, which required them to suggest definitions of first-year success and discuss their experiences of the first year of university. Thus, the use of focus groups provided an interactive environment which allowed a group of first-year students to generate concepts and explore this topic freely.

The major difference between the focus group and other qualitative methods is the interaction between individuals within the group (Stewart & Shamdasani, 2014), and it allows student participants to speak with one another through exchanging ideas, questioning one and other, and commenting on different opinions. The discussion between individuals in the focus group enables them to help each other to recall memories of jointly experienced events (Tracy, 2013), builds on ideas and insights on the basis of consensus and diversity among individuals, and offers valuable data that would not be possible to achieve without the interaction found in the groups (Morgan, 1996). This was particularly useful for this study as it involved a collective form of ideas and opinions between individual students through the use of group interactions to generate definitions of first-year success. It has an additional benefit that the focus group discussion can provide a situation in which students can learn, educate, and understand perspectives from other students of different backgrounds (e.g. non-local). For instance, in one group there was a situation when a non-local student shared his views about the importance of learning the local language, and described this as one of his greatest achievements in his first year. This response captured the attention of many local students in the group and they considered different practices about welcoming foreigners as local people. This was an example of how a focus group encouraged plurality in the construction of knowledge through group interactions that could accentuate empathy and common experiences.

There is no common consensus on the optimal focus group size, but the recommendation is 6-12 people (Dawson, Manderson, & Tallo, 1993; Kitzinger, 2005; Morgan, 1996; Peek & Fothergill, 2009). A smaller group may allow more opportunity for each participant to talk but also imposes a greater burden on each of them (Morgan & Scannell, 1998). Morgan and Scannell (1998) advised researchers to consider the numbers of questions asked and the duration of the group, then work backward to estimate how much time would be allowed for each person to talk. On the other hand, Morgan (1992) argued that the number of participants should depend on the research design rather than just sticking to the "rules of thumb". Such research design principles should connect to the purpose of the research and specific processes that would best achieve the ultimate goal of the study. In this study, there were approximately ten to twelve participating students in each group, as I believed that this number would be sufficient in the current context (i.e. participants being first-year university students) to

provide a wide range of perceptions and experiences, but not too many to restrain them from participating or interacting within the group (Krueger & Casey, 2009; Morgan, 1997; Prince & Davies, 2001). As a result, three focus groups, with a total of 31 first-year students, participated in this qualitative phase.

There was no pilot study prior to the actual administration of the student focus groups, except that the questions were given to another researcher for the purpose of clarifying the wording. Nevertheless, some adjustments were made over time after the first focus group was conducted. For example, the sequence of the questions and activities was changed to allow better discussion between students. In the first focus group, the students were asked to describe five characteristics of a successful first-year student and then to rank the top three most important attributes individually. The next part involved moving from individual to group decisions, i.e. after their individual generation of success indicators, students formed groups and decided the order of importance of the attributes. The reason for this was to allow more discussion among students by exchanging ideas and questioning each other before collective decisions were made. In addition, some questions were added (e.g. How would you describe a first-year experience that was a failure?) after the first focus group was conducted to include negative question so that contradictory comments could be captured for a better understanding of the findings.

At the beginning of the focus group, I introduced myself, stated the purpose of the study, described the procedure in the focus group and explained the ethical issues to assure all participating students that the data collected would only be used for the research study. The participants were informed that the results would be anonymous, and were assured that there would be no identification of individual participants anywhere in the study. I also obtained permission for audio recording to facilitate the transcription. All focus groups took place on campus, in classrooms which were convenient, familiar and easily accessible to all participating students. I chose a relatively small classroom to create an informal, relaxed and inviting environment so that participants would feel more comfortable with the setting (Nevill & Rhodes, 2004). I also encouraged the participants to speak one at a time to ensure that all conversations could be heard by everyone. Seating arrangements were taken into consideration, with a round table setup to allow all participants to see and hear each other, thus minimizing the chance of isolating any participants (Morgan & Scannell, 1998). Snacks and light

refreshments were provided throughout the session and placed on the table to make participants feel relaxed and comfortable, and to make their experiences as enjoyable as possible. Two out of three of the focus groups were conducted in Cantonese, supplemented with English when necessary, as most of the students in these two groups were local Hong Kong Chinese. I felt that using their mother tongue would enhance better communication and make the local Hong Kong Chinese more relaxed and comfortable. The other group, consisted mostly of non-local students, was conducted in English and I observed that the local Hong Kong Chinese students in that group were also able to express their views in English freely.

In the process of moderating the focus groups, I was aware of the likelihood that my perspectives might have influenced the students' responses. As an administrator in higher education, I have my own views about students' success and biases that possibly reflect the University's perception of different aspects of the first-year experience. I made sure that my role as a moderator in a focus group was to guide and to facilitate discussions among participants, to probe for details when necessary, and not to share my views, engage in discussion, or control the conversations (Krueger, 1997). I controlled my reactions and tried to refrain from giving my opinions or emotions (e.g. facial expressions, body language), and the involvement was restricted mainly to listening, prompts, probes and directed toward the topic of investigation (Lewis, 2000). I reminded students at the beginning of each session to respect others by having only one person speak at a time and encouraging everyone in the group to have the opportunity to speak. I also invited other students to speak up if any particular student dominated the discussion. I tried to stay calm to listen to all the responses that students made regarding their experiences in the first year without injecting my personal bias. I held back on expressing my personal and professional views as a member of university staff, and instead just listened to the responses that student made regarding their experiences in the first year.

A set of key open-ended questions was used in the focus groups (Gall et al., 1999), as shown in the focus group discussion guide in Appendix 4. Group exercises were included and the participants were given pens and paper to present their ideas and views. As the aim of this phase was to investigate students' perceptions of success, questions were designed to capture multiple aspects of student success in relation to the first year of their university lives. These questions included, for example, *"What would*

be the greatest achievement for a first year student? Please name 3 achievements and explain why?". As a facilitator, I used probes and prompts (Swanson, 1986) to encourage the participants to talk more and to give examples. Sometimes I asked them to relate their responses to each other and to identify relationships. For instance, some students put down "socially active" as one of the greatest achievements for first-year students. I then followed up and asked them to give examples of how to define a socially active student. Another student wrote that achievement in first year was being able to make new friends. After the students presented their responses and explanations, I asked them to make some categorizations collectively and gave a description of each grouping. At the end, the students were able to categorise a specific domain of success by giving descriptions and examples of the actual components to be considered as success indicators within that particular domain.

Different questioning techniques were employed in the focus groups. The 'think-back' questions asked participants to reveal particular experiences or occasions before responding to a specific question (e.g. Think back to the time you have spent at this university, what would be the greatest achievement for a first-year student?). The 'think-back' questions helped to establish a context that required the participants to focus on specific personal experiences (McLachlan & others, 2005). This technique also shifted them to another timeframe, to prevent a tendency for them to respond to their more recent personal experiences. The emphasis on the past aided the respondents to focus on specific experiences, which potentially increased the reliability of the responses because it asked about specific experiences as opposed to current intentions or future possibilities (Krueger & Casey, 2014). Another technique, positive and negative questioning, was also used (e.g. How do you describe a successful first-year student, and how would you describe a first-year experience that was a failure?) to allow the participants to comment on both sides of the issues; on some occasions it may have been particularly important for them to do this. Krueger and Casey (2014) advised that positive questions should be placed before negative ones to avoid participants becoming excessively critical. The questions were modified slightly and developed after each focus group to address the issues better and clarify some points. For example, the initial discussion guide did not include any questions that may generated negative responses, but one was added later. This was the question "In your view, how would you describe a first-year experience that was a failure? Why?". This question was added

to capture any contradictory comments and it helped to confirm what the students had said about first-year success. This “iterative” process of collecting data, ongoing analysis and feeding-back the information are important features of qualitative research (Dawson et al., 1993).

4.1.2 Qualitative Data Analysis

The focus group data were transcribed in the language used in the interview. In other words, one transcript was in English and the other two in written-Chinese. An example of a partial transcript in English is illustrated in Table 4-1. The translation from Chinese into English took place during the analysis phase, when I developed the codes and themes in English. The reason for keeping the Chinese transcriptions in their original form until this stage was to minimize the loss of originality of meaning that might have occurred during the translation and interpretation processes. To minimize the translation-related issues, another expert, who was bilingual and worked as an administrator in the same higher education institution, was consulted to view the codes and themes in the transcripts to ensure the accuracy of the translation from Chinese to English (Briguglio, 2000). I also discussed constantly with different colleagues who were fluent in both Cantonese and English regarding the best terms to use in the analysis and report. The audio files of the focus group discussions were used to produce a readable verbatim format of written text after removing all repetitions, non-word utterances (e.g. “um”, “er”), and non-verbal noise (e.g. laughter, throat-clearing). These general principles of discourse transcription can make the transcripts easier to read without changing the meaning of the dialogue (Du Bois, 1991). All the information that could identify participating students was removed to ensure their anonymity. After all of the transcriptions had been completed, I listened to the recording once more to allow modification and correction to be made for any missed or incorrect data.

Table 4-1 Example of a partial transcript

Speaker	Transcript
Researcher	**I would like you to describe and write down what "a successful first-year student" means to you? Please write down 5 words/ characteristics to describe a successful first-year student**
Student 1	I put down "balance", think that a successful first year student should find a balance between his or her busy academic and social life, or other activities, or even play.
Researcher	**In what way? When you say to find a balance, what do you mean?**
Student 1	There are too many interesting things to choose from and you have to choose properly because you have very limited time, and you also have to manage your time, like while you are having fun, you also have to study hard.
Researcher	**Any other aspects?**
Student 2	I think a successful year 1 student should really learn something in university other than just studying. Like for me, I stay in a hall [of residence]. If I get the chance to learn how to cook or live by myself, then I think it's successful. I've really learnt something.
Student 3	I am also seeing that too, and it is important for successful year 1 students to adapt to university academic study, especially on the academic side… and it is so different from secondary school life.
Student 4	Compared to secondary school life, university life is more stressful, because it's like having DSE every week. Whenever deadlines come, you are experiencing or feeling stress again and again. We need to spend more time on tackling the tasks and doing research, it is more time-consuming. We need to be more focused when the task comes. I think it is more stressful and it is more impossible to handle all these tasks all at the same time.
Researcher	**So far how do you cope with stress?**
Student 4	I mainly talk with friends and seek help from friends.
Student 5	I agree and I think as a successful student, we ought to establish new social networks, because in the past, in secondary school, we spent several years to build up our social networks within our secondary school. When we came to university, we met new classmates, and even needed to get into new social circles. We needed to find someone to get along with in the future and study, so I think when you talk about being a successful first year student, you need to include this perspective.

Content analysis was used to analyse the qualitative findings. Krippendorff (2004) described this as a technique to permit researchers to make replicable and valid inferences from meaningful context. It is an inductive approach, also called thematic

content analysis, that identifies themes, derives concepts and establishes relationships within the data (Bryman et al., 2002). This technique is systematic and verifiable from the use of codes and categories. Codes are the most descriptive analysis unit, with commonly used words or labels assigned to chunks of textual data in the first-level analysis process. The principle of creating new codes is based on new information mentioned. In this study, the codes were established through mirroring the participants' language, thus they were more descriptive and dependent on contextualized meaning. To come up with the codes, I read the transcripts repeatedly, line-by-line. This enabled a coding frame to be established, which was used for other transcripts. When new information came up, it became a code. In some circumstances, more than one code could be assigned to the same part of the data. Once all the initial codes had been generated, a thorough review was conducted of the content of each code and all sets of codes. Then I started the second level process of analysis in an attempt to interpret the codes from my implicit understanding of the data, by moving back and forth in the coding frame to group the codes which shared similar commonalities or meanings, and I searched for themes. This process was more complex and interpretive; from my understanding of the data I was able to consider the meaning within and across groups. This process was not always fluid, it required many iterations to modify the groupings, as when a new code emerged or changed, the coding frame needed to be modified and the transcripts were re-read according to the new structure.

Once the new themes had been constructed, I looked for relationships between themes and codes and examined whether I could categorize them into a more defined domain. Sometimes, a code could be contained within another one, with a relationship between the codes identified. For example, in defining success, a code of "stepping outside one's comfort zone – joining social activities" was created, and another code "joining social activities" emerged as a definition of success. Although these two codes appeared to be similar, the context was different; the former suggested that participation in social activities is a means to success in other domains, while the latter referred to social participation as an outcome of success in its own right. In the process of grouping the codes into themes, these two codes were classified under different themes, but a relationship was established between the two themes. Sometimes different themes shared the same code, so I went back to the transcript to identify the contexts and meaning of that particular code. In some cases, I had to modify the initial code further,

either by creating another new code or "re-wording" the initial code. If a new code was modified, I revisited that particular code throughout all transcripts to see if further modifications were needed. Once the themes and domains had been formed, I conducted a final review by looking into all the codes and themes across all transcripts to see if the definitions of success had been captured accurately.

This recursive process of moving back and forth within the data to become familiar with the data, generating codes, searching for themes, reviewing themes, defining categories and producing the report indicates the inductive approach that I used in this qualitative analysis (Braun & Clarke, 2006). One advantage of using this approach is that there were no prior assumptions, hypotheses or theories, and it allowed the analysis to be guided by specific research objectives (Cohen et al., 2002). This approach allowed themes and concepts to emerge from the raw data. Under this approach, the definitions of first-year success were developed as the coding and groupings of themes emerged, so that it was purely data-driven, without being restricted to other imposed methodologies (Thomas, 2006).

4.1.3 Ethical Considerations

This phase of the study complied with the ethics procedures of the University of Bristol Graduate School of Education (GSoE) and the Hong Kong Polytechnic University (PolyU). Prior to commencing the recruitment of students and data collection, permission was obtained from the teaching team of the subject from which the students were recruited. Details about the research methods, procedures, participants and their rights and relevant documents relating to the ethics application (e.g. information sheet, informed consent form) are provided in Appendix 3.

One potential issue arose which needed to be considered in this phase of the study; the fact that the researcher was a current member of staff in this higher education institution. First, it was necessary to establish whether there could be any potential ethical or moral dilemmas in the relationship between researcher and participants due to authority or the concept of hierarchy that might have caused participants to feel anxious or not be completely open or comfortable. In this kind of situation it is possible that the perceived power of the researcher could influence the way participants behave, or affect

their decisions about what information to give or how to present it (McCroskey & Richmond, 1983), as they might fear how their given information would be used (Busher & James, 2012). In this study, it was necessary to prevent students from worrying whether what they said in the focus group would influence their grades in the subject from which they were recruited. The data could be skewed if the felt they should give positive answers or acceptable views rather than expressing their true beliefs. To deal with this, I revealed myself as a non-teaching staff member from an independent non-teaching unit in the University. I have explained my role clearly to the students and highlighted the aim of the study, emphasizing that the results would not be linked to their assessment and they would not be identified in any process of the study. Second, in my position I could easily have accessed some of the information about participants such as internal documents or demographic profiles. The ethical dilemma emerged of whether the information should be retrieved or used for research purposes. Thus, I followed the internal ethics process strictly to ensure permission was obtained from the relevant stakeholders before any personal information was accessed. I was also aware that some participants might try to use the focus group as a channel to pursue other political agendas, such as complaining about teachers or subjects in the University. When this situation happened, I acknowledged the participants' negative feelings and redirected them to the topic of the questions in the focus groups. There was no incentive for participation, but I motivated students by emphasizing the importance of their contributions.

4.2 Structuring the Mixed-Method Design

This study used an exploratory sequential design, adopting a two-phase mixed methods approach, consisting of student focus groups (phase one) and a large-scale survey (phase two). Overall, phase one was employed to answer the first research question as outlined in Chapter 1 (1.5.3). Thus, students' perspectives on success was explored. Sequentially, the results, i.e. the definitions of first-year success, from the student focus groups informed the construction of a questionnaire used in phase 2. The questionnaire attempts to investigate different dimensions of students' experiences from the first year of the undergraduate studies. The second phase of the study aimed to identify driving forces to student success, which answered both second and third

research questions. Triangulation using focus groups and survey was used to understand the relationships between different aspects of student success and its associated factors, and the combinations of the two methods helped to confirm, cross-validate and corroborate findings on student success and experiences.

The exploratory sequential mixed-method design provided the opportunity to examine students' perception of success, the relationships between success variables, and the driving forces to different dimensions of success. The second phase has a slightly greater scope as it covered a large number of first-year students in one of the largest student populated government-funded university. Mixing occurred during the interpretation of results, discussions and consideration of the study's implications. The summary of the sequential exploratory design of the mixed-method approach adopted in this study is shown in Figure 3-1.

4.3 Phase 2 – A Large-Scale Student Survey

The second phase of the study sought an understanding of the extent to which predictors from different aspects of the first-year experience influenced the perceived success as defined in the previous phase of the study. The primary objective in this phase was to discover relationships between first-year success and a number of predictors that have been identified in the literature, through the Input-Environment-Outcomes framework. As this phase of the study aimed to investigate the extent to which each predictor impacted on first-year success and associations between the success variables and the predictors, it required a much larger proportion of the population to be sampled (Aliaga & Gunderson, 1999). Thus, a student survey was adopted in this phase. The following section describes the choice of the research design, methods of data collection and analysis, with discussion on ethical considerations in this phase.

4.3.1 Quantitative Research Design

For this phase a survey research design was adopted to investigate students' perceptions of different aspects of their first-year experience and their engagement at

university for a number of reasons. First, this student-survey approach enabled the collection of experiences and perceptions of first-year success across a large population (Mertens, 2014). Second, it allowed the researcher to describe the nature of existing conditions (e.g. how students perceived their attainments in the first year), determine relationships between variables, and make predictions about particular outcomes (e.g. personal success) based on existing phenomena (Creswell, 2003). In addition, survey research permits findings to be generalized to a wider population with similar context (e.g. where success extends beyond retention) (Johnson & Christensen, 2008).

A web-based survey method was chosen as the method of data collection for this study. The questionnaire was completed via an online channel. Mertens (2014) suggested that the choice of survey approach should depend upon the purpose and nature of the survey, cost, accessibility, and size and characteristics of the sample. The online survey approach was adopted for several reasons. First, an online survey may save time for the researcher, who can gain access to a large number of individuals quickly by sending email invitations (Schellings & Hout-Wolters, 2011). In this study, I had access to the database of the entire first-year students in the University's Student Record System. Second, this method was considered as relatively low cost in terms of data collection and processing (Wright, 2005), as the data could be collected and processed within a relatively short period of time compared with other methods such as a mail survey. Third, the online survey provided flexibility for the respondents as they could choose their own time and place to complete the survey form (Nardi, 2018).

Despite these advantages of the online survey method for this study, there were also some disadvantages. First, the survey questions were fixed, which did not allow researcher to probe or correct any misunderstandings of questions. Second, the survey was self-administrated, which may have involved self-selection bias or non-response, since there is a possibility that some individuals (e.g. students who were dissatisfied, or satisfied, with their first-year experiences) were more likely to respond to an invitation to participate in the survey while others may ignore it (Thompson, Surface, Martin, & Sanders, 2003). Third, the online survey relied on some kinds of self-reporting mechanism, which required the participants to answer the questions truthfully. There have been criticisms of self-report data, particularly in terms of the creditability, accuracy and reliability of the survey results, and the possibility of generating dishonest or inaccurate answers from participants, such as responding more favourably toward

certain occasions (Gonyea, 2005). Although self-report data seem unavoidable in many educational research studies, many of these issues can be resolved, or at least minimized, through careful and thoughtful planning. For example, Hoskin (2012) stated that dishonest answers can be attenuated if the participants' responses are anonymous and confidential. Hu and Kuh (2003) argued that self-report measures are generally valid if the questions are phrased unambiguously, or as long as the respondents can understand what exact information is requested, and feel that their responses are valued.

The survey was conducted in the university and this research tapped into it to capture the data that were relevant for my research. Thus, this research was part of the student survey used at the university in this study. To minimize the issues of non-response and self-report bias, the following procedures were applied. First, a cover email was used to explain the purpose of the research and the importance of the participants' contribution to the study. It was personalized and issued under the name of the Associate Vice President (Teaching & Learning), to show the importance of the survey. Second, the participants were ensured that their identities would remain anonymous and confidential, that only aggregated results would be reported and that no students could be identified through their responses to any items on the survey. To increase the response rate, two reminder emails (see appendix) and Small Message Services (cellular phone text messaging) were sent to the participants who had not responded. Additional promotion of the survey was made through banners and posters displayed throughout the campus a week before the data collection commenced. Furthermore, certain steps were taken as a strategy to motivate survey participation. For instance, the University logo was used in the survey to enhance the credibility of the study. Each email was personalized by using the student's name in salutation. The reasons for individual participation were emphasized and a realistic estimation of the time required to complete the questionnaire (i.e. approximately 15 minutes) was provided. Explanations were given of how the data would be handled to ensure confidentially, and finally, names and contact details were given for participants who wished to make enquiries. In addition, the questionnaire was piloted prior to the actual implementation, to satisfy the four conditions of obtaining valid self-report data as introduced by Tourangeau et al. (2000). These conditions were to ensure a) questions are clear and unambiguous, b) respondents were able to answer the questions, c)

respondents believed that the questions merited a thoughtful response, and d) response options were clear, not leading to any embarrassing, socially undesirable options.

Population and Sample

In this phase of the study a cross-sectional study design was adopted to produce a 'snapshot' of a population at one point in time (Cohen, Manion, & Morrison, 2007). This design is particularly suitable for research that emphasizes the analysis of a phenomenon or problem to understand perceptions, attitudes and behaviours by studying a cross-section of the population at a particular time point (Kumar, 2014). In particular, this study aimed to investigate students' perceptions of their first-year success, and how they could be influenced by different aspects of their university experiences (i.e. predictors). The choice of a cross-sectional design was appropriate with an additional benefit that it is comparatively quicker and cheaper to administer compared with longitudinal design. Nevertheless, the ability to determine causal relationship between variables is limited in cross-section design.

The target population of this study was all current first-year undergraduate students in the university. First-year students in this study were defined as those who had just completed their secondary education prior to commencing their studies at this university. In other words, these students had no previous post-secondary experience and it was the first year in which they had been exposed to the university environment. Senior-year admitted students, who would normally have undergone some kind of post-secondary education in Hong Kong (e.g. at technical college or university), were excluded from the study.

A sampling frame - a list of students, who were enrolled in the academic year of 2017/18 and met the definition of first-year undergraduates - was generated from the University's Student Record System. The population size for this study was 3,226 students, and a total of 1,470 participants responded, yielding a 45.6% response rate.

Survey Instrument

Currently, the university in which the study was conducted administers a First-Year Experience (FYE) survey, which was developed in-house in 2012. There are more than 80 items in this questionnaire. The items were developed initially based on the literature that was thought to be relevant to the local context, and made reference to other similar instruments such as the NSSE (National Survey of Student Engagement, 2000) adopted in the United States. For example, 12 items related to student modifications made to the survey. The pre-existing survey has been used for over 5 years and it has over 10 constructs, covering different aspects of the first-year experience, measuring students' perceived learning experiences, attainment of personal development, provision of support, success in academic transition, sense of belonging, satisfaction and level of engagement in different aspects of first-year university life.

For the purpose of this study and to answer the specific research questions, extra items were added based on the existing literature and findings from the student focus groups in the previous phase. Nineteen items were added to the pre-existing FYE survey, including different domains of first-year success defined in the previous phase and the constructs of peer and faculty interactions. These newly added items were piloted and details are described in the following section of the data collection process. Table 4-2 presents the structure of the questionnaire and shows the dimensions of the questions used for this research. A copy of the questionnaire is also presented in Appendix 5.

Table 4-2 The structure of the online questionnaire used in this study

	The present research	Used by the University
Student consensus to link their information to the University's record	✓	✓
Gains in personal development	✓	✓
Learning experiences:		
- Perceived support	✓	✓
- Sense of belonging	✓	✓
- Academic transition	✓	✓
Dependent variables		
- Social success	✓	
- Academic success	✓	
- Personal success	✓	
Peer interaction	✓	
Faculty interaction	✓	
Student engagement on		
- Academic activities	✓	✓
- Social activities	✓	✓
- Part-time work	✓	✓
Student background information	✓	✓
Student integration		✓
Participation of the University's GUR activities		✓
Suggestion on improvement on experiences		✓

The variables in the study

The variables used for analysis in this study are outlined in Appendix 6. The dependent variables were student's satisfaction with their first-year success in social, academic and personal aspects, which were derived from the findings of phase one of the study. The independent variables were a combination of single-item and composite measures.

1) The dependent variables

There were three dependent variables in this study, measuring students' definitions of first-year success in three different aspects of their student lives: (1) social success, (2) academic success, and (3) personal success. Items capturing the meaning of success within each domain from the previous phase were developed, piloted and incorporated into the questionnaire for the measure of dependent variables. As a result, each dependent variable was a composite measure made up of the following items:

a) Social success
    - Making new friends in first year
    - Participating in social activities during first year
    - Level of involvement in serving social clubs/societies
    - Social life during first year

b) Academic success
    - Academic performance during first year
    - Adjustment to university learning

c) Personal success
    - Overall gains in learning
    - Overall quality of first-year experience
    - Smoothness of transition from secondary school to university

The respondents rated the extent to which they were satisfied with these statements on a 5-point scale, where 1 = very dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, and 5 = very satisfied. Satisfaction was used to reflect the students' overall perceptions of success in particular domains, as success in the perceived attainment of outcomes may vary across individual students.

A scale score for each type of success was derived. This was an average of the items within that scale. For example, social success consisted of 4 items and an average

score of these items were computed into a single variable representing the domain of social success.

The Cronbach alpha coefficient for the sample used in the present study for social success, academic success and personal success were 0.893, 0.818 and 0.815 respectively, suggesting a good reliability of the measures used for the dependent variables (see Appendix 7).

2) The independent variables

The independent variables represented several concepts and constructs, which were identified in the literature and chosen to reflect the specific context of this study. These independent variables captured different aspects of student experiences on campus, along with students' engagement with various types of academic, social, part-time work and leisure activities. The independent variables covered single-item and composite measures, with a total of 63 items. Single-item measures included engagement in different dimensions of university life. Thus, the numbers of hours spent on academic activities (attending classes, preparing for class, doing assignments), social activities (socializing and entertainment, co-curricular or extra-curricular activities, leadership role/committee work in student groups, clubs or student union), own activities (reading books, exercising or sports), and work (part-time paid/ unpaid work). It is worth noting that students were asked to recall these engagements and experiences from their first year, i.e. retrospective data. Nevertheless, given by the capacity and practicality of this study, collecting retrospective data from participants to recall their first-year experiences was considered suitable at the time when the data were collected.

Composite measures in the survey included a sense of belonging, peer and faculty interaction, perceived support, gains in personal development, and success in academic transition. The reliability of each of the composite measures was checked and retested in SPSS for this sample to ensure the internal consistency in scale items for each construct (Seale, 2004). The Cronbach alpha coefficient is presented in each of the scales used in the following section.

a) Sense of belonging scale (Cronbach alpha coefficient: 0.846)

This scale was developed in the pre-existing FYE survey by the Hong Kong Polytechnic University in 2012. It was selected for this present study to measure the students' sense of belonging to the institution, department, professors and their fellow students. It consisted of the following items:

- I feel connected with professors and fellow students in my Department/ Broad Discipline
- I have made a lot of new friends at PolyU
- I feel a sense of belonging to my Department/ Broad Discipline
- I feel a sense of belonging to PolyU
- I have learned to take more responsibility for my own studies
- There have been sufficient opportunities for me to take part in co-curricular and extra-curricular activities for all-round development

The respondents were asked to rate their levels of agreement on a scale of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The scale score for this measure was an average score of all the items above.

b) Peer interaction scale (Cronbach alpha coefficient: 0.862)

This scale, a newly added construct for the purposes of this study, was developed by Johnson et al. (2007). It was selected to measure the frequency of peer interaction in various activities in the first year of study, and comprised the following items:

- Studied together
- Attended social events together
- Shared a meal together
- Had intellectual discussions outside class
- Did extracurricular activities together
- Shared personal feelings and problems
- Discussed social/cultural issues outside class
- Shared a common living space with other students at PolyU

- Dated someone from university

Respondents rated the frequencies of their interactions with other students in this institution, using the scale of 1 = not at all, 2 = a little, 3 = a lot, and 4 = all the time. The scale score for this measure was an average score of all the items above.

c) Faculty interaction scale (Cronbach alpha coefficient: 0.810)

This scale, which was also added for the purposes of this study, was developed by Johnson et al. (2007). It was selected to measure the frequency of student-faculty interactions in the first year of university life, and comprised the following items:

- Visited informally with teaching staff before/after class
- Made appointment to meet teaching staff member in his/her office
- Asked teaching staff for information related to course
- Communicated with teaching staff via email, learning management system or other channels

The respondents rated the frequencies of their interactions with their teachers in this institution on the scale of 1= never, 2 = once to a few times a semester, 3 = a few times a month, and 4 = once or more a week. The scale score for this measure was an average score of all the items above.

d) Perceived support scale (Cronbach alpha coefficient: 0.841)

This scale was in the pre-existing FYE survey, developed by the Hong Kong Polytechnic University in 2012. It was selected for use in the present study to measure students' awareness and perceived support provided by the university. It comprised the following items:

- I know where to turn for help when I encounter problems in my academic studies
- I know where to get help when I encounter personal problems
- I am aware of the student support services provided by different offices/units of PolyU (e.g. Student Affairs Office, Mainland and International Student Services etc.)

- Useful advice is available for academic matters
- There have been sufficient opportunities for me to interact with my teachers inside and outside class.

The respondents were asked to rate their level of agreement under the scale of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The scale score for this measure was an average score of all the items above.

e) Gains in personal development scale (Cronbach alpha coefficient: 0.947)

This scale was developed originally in the pre-existing FYE survey. It was selected to measure the self-evaluation of generic personal development and learning gains in the first year of study. The items were:

- Develop a better understanding of yourself (e.g., abilities, interests, limitations, personality, etc.)
- Identify your own educational and career goals
- Develop a study plan according to your educational/career goals
- Develop interpersonal skills for functioning as an effective leader or team member
- Become aware of your social and national responsibilities as a citizen
- Improve your information skills (e.g., searching, evaluating and managing information)
- Critique other people's arguments or viewpoints
- Judge the credibility of information
- Make rational judgements based on logical reasoning
- Become more active and independent in your study
- Develop your problem-solving ability
- Identify problems and their causes
- Generate innovative solutions to deal with problems in professional and daily contexts
- Adopt a healthy lifestyle (e.g. exercise regularly, maintain a balanced diet, maintain emotional stability, etc.)

The scale for the respondents to rate their perceptions of their gains was: 1 = very little, 2 = little, 3 = adequate, 4 = much, and 5 = very much.

f) Academic transition scale (Cronbach alpha coefficient: 0.792)

This scale was in the pre-existing FYE survey to measure success in academic transitioning during the first year of university. The following items were used:

- I have difficulties in adjusting to the teaching and learning methods at university
- Many of the assessments in my first year require mere memorisation of facts rather than deep understanding
- I have difficulties coping with different types of assessment (e.g. individual assignment, group project, presentation, mid-term test, exam)
- I have difficulties managing my time for studies and other activities
- The workload in my first year of study is too heavy for me to cope with
- I have not yet made up my mind which major/programme to take

A five-point scale was used, where 1= strongly disagree and 5 = strongly agree. For the ease of interpretation, the response was reverse coded in the analysis to align with other constructs. In other words, this construct represents a success in academic transition.

g) Students' background information

Students' background information included gender, age, university entrance scores and first-year GPA. All of this information was retrieved from the University's student record system and mapped into the data file for each participant in this study.

The variable of gender in the data file was coded as 0=female, 1=male. Age was calculated based on date of birth and the first day of university commencement (i.e. 1st of September in 2017). University entrance was mainly the result from the open examination, the DSE, in the local secondary school. First-year GPA was the average aggregated academic performance of all the completed first-year subjects, ranging from 1 to 4.

Validity and reliability of quantitative data

To ensure the constructs or scales used in the instrument were accurate reflections of what was being measured (validity), content validity was established by soliciting experts (e.g. academic staff, student affairs professional) in the context of higher education (Seale, 2004). To establish the reliability, Cronbach alpha coefficients for each of the composite measures (i.e. sense of belonging, peer interaction, faculty interaction, faculty interaction, personal development, and academic transition) were calculated in SPSS for this study's sample. The Cronbach alpha coefficients for the composite measures are summarised in Table 4-3.

Table 4-3 Internal consistency of each construct

Construct	No of items	Cronbach alpha coefficient
Sense of belonging to the institution	6	0.846
Peer interaction during first year of studies	9	0.862
Faculty interaction during first year of studies	4	0.810
Perceived support provided by the institution	5	0.841
Perceived personal development during the first year of studies	14	0.947
Academic transition to first year of studies	6	0. 792

According to Bryman and Cramer (1990), an acceptable level of internal reliability is about 0.80, and a value between 0.8 and 0.9 should be classified as excellent. In the reliability tests carried out for the instruments used in this study the Cronbach alpha coefficients ranged from 0.79 to 0.95, considered to be within the accepted levels of internal reliability. Although one of the coefficients was 0.79 (i.e. the construct of academic transition), marginally lower than the acceptable threshold, this construct was treated as a reliable measure. Nevertheless, Goldstein (2011) stated that even a reliability coefficient is as high as 0.80 might still need to be treated with caution

as the accepted level of internal reliability is depending on the context in which they are used.

Data Collection Process

The data collection in this phase took place before the end of the second semester to maximize the students' first-year experiences in all aspects of university life, including academic and social (Keup & Barefoot, 2005). The researcher considered another possibility for the data collection period, to conduct it after the completion of the entire second semester, when all students had started their summer holiday. However, this option was considered less viable because there may have been a higher chance that students would not respond to their emails during the summer holiday. Thus, a much lower response rate may have resulted. The survey system was set up on the university's server, which is a secured platform with password protection. All first-year students received an email invitation, which explicitly explained the purpose of the survey and the importance of their participation. A unique web address was given to each student in the email, where they could click directly on the link to access the questionnaire. Email contacts for the researcher of this study and other colleague who were responsible for the survey administration were also be made available to students in case they needed to seek further information. The survey was opened for two weeks, followed by two email and SMS reminders, sent out a week after it commenced and a day before it ended to the students who had not responded. A thank you email was sent out to all students who completed the questionnaire. Copies of the email invitation, reminder email and SMS, and the thank you email are presented in Appendix 8.

A pilot study was conducted prior to the survey implementation. The modified questionnaire (with new added items) was given to a group of five students, who were approached by the researcher in person in a common area on campus, outside the student café. These five students were invited to read the invitation email and the modified questionnaire, were reminded to focus on the wordings of the items and to give feedback after they had completed the questionnaire. The purpose of this pilot was to validate the collection of self-report data, including the clarity of the questions and the response options. The respondents were able to answer the questions and believe the questions merited thoughtful responses (Tourangeau et al., 2000). The five participants

felt that the purpose of the study was clear and that their participation in the study would be important. They understood clearly that their identities would be anonymous and confidential. They made some comments on some of the item wordings. As a result, slight modifications were made to the exact wording of some items. For example, the students did not understand the term “rooming together”, which was then replaced by “sharing a common living space with other students”. This pilot study should have satisfied the four conditions suggested by Tourangeau et al. (2000) for obtaining valid self-report data. A list of the changes in wordings is displayed in Appendix 9.

4.3.2 Quantitative Data Analysis

This study primarily used descriptive statistics and multiple regression analysis to understand the students’ perceptions of different aspects of their first-year university experiences and to identify factors that influenced first-year success. The computer software programme Statistical Package for Social Science (SPSS) was used for the analysis. The research questions examined were as follows:

1. What is the relationship, if any, between different domains of success as defined in the previous phase of study?
2. To what extent do different aspects of the university experience influence each domain of success in the first year of higher education?

Mean scores and standard deviations were computed to identify the students’ perceptions of success and their experiences in multiple aspects of first-year university life. In addition, correlations were used to examine the relationships between the three domains of success. The second research question used hierarchical linear regression (blockwise entry) to identify the extent to which different aspects of the first-year experience predicted success in the first year. This method of analysis was chosen as it can be used to explain the variance in the success variables (i.e. dependent variables) when the predictor variables are at varying hierarchical entries (Woltman et al., 2012). Thus, it was used to identify additional impacts of each of the predictors on students’ defined success. In other words, it permitted several regression models by adding variables to a previous model at each step (i.e. later models always included smaller

models in previous steps). The purpose of this analysis was to determine if newly added variables showed a significant improvement in the proportion of explained variance in the dependent variable by the model (i.e. R^2). According to Cohen and Cohen (2003), demographic variables are typically good for the initial step entry. In this study, the predictor variables were divided into five steps and were entered into the model (see Table 5-3). The first entry (Step-1) consisted of the student demographic variables, such as age, gender, university entrance scores and first-year GPAs. The reason for this was that, according to other studies, student demographic variables generally influence how students engage in other activities, thus more appropriate to enter in an earlier step than other predictor variables (Briggs, 2012). At Step-2 were academic-related experiences, including success in academic transition, academic engagement, and faculty interaction. Step-3 included social-related variables, including peer interaction and social engagement. Step-4 was personal-related variables, including gains in personal development, engagement in part-time work and own leisure activities. The variables at the latest step of the hierarchy (Step-5) were the institution-related, namely sense of belonging and perceived institution support. This method helped to identify the significance of the predictor variables and additional variance explained by each hierarchy in the model. Separate hierarchical regression analysis was performed for each domain of first-year success as defined by students in phase one of the study. Table 4-4 displays a summary of the variables used in the hierarchical regression analysis.

Table 4-4 Summary of variables used in the hierarchical regression analysis

Dependent variables (DV)	
DV1: Social success	Composite measure of making new friends, participating social activities, level of involvement in serving social clubs, and my social life
DV2: Academic success	Composite measure of academic performance and adjustment to university learning
DV3: Personal success	Composite measure of overall gain in learning, quality of first-year experience and a smooth transition from secondary school to university
Independent variables (IV)	
Entry-1: Student information	Age; Gender (0=female; 1=male); University entrance score; First-year GPA
Entry-2: Academic-related	Academic engagement; Success in academic transition; Frequency of faculty interaction
Entry-3: Social-related	Social engagement; Frequency of peer interaction
Entry-4: Personal-related	Perceived gain in personal development; Engagement in part-time work; Engagement in own leisure activities
Entry-5: Institution-related	Sense of belonging; Awareness of institution support

The assumption of multicollinearity was examined in all three models by investigating the VIF and tolerance statistics. According to Bowerman and O'Connell (1990), if the largest VIF statistic is greater than 10 or tolerance statistic below 0.1, this indicates an area of concern in the model. In all the regression models, no VIF or tolerance statistics were beyond the acceptable range (i.e. all VIF statistics were lower than 10 and tolerance statistics were above 0.1, see Appendix 10), indicating that this assumption was satisfied in all the regression models.

4.3.3 Ethical Considerations

Educational researchers should always be mindful of the way they conduct their research and are obliged to protect participants' privacy interests while, at the same time, maintaining the integrity of research and the research community (Strike, 2006). In both phases, compliance with the ethics procedures at the Graduate School of Education (GSoE) of the University of Bristol and the Hong Kong Polytechnic University (PolyU) was ensured. The ethics forms are provided in Appendix 11. Several ethical issues were taken into consideration during the entire process of research

planning and design, sample recruitment, informed consent, privacy, anonymity and confidentiality, data handling and analysis, data storage and reporting of findings. First, an email invitation was used to explain the purpose of the research and the importance of the survey in the study, and the researcher's contact details were given for enquiries. The survey participation was voluntary and all respondents gave their consent to participate by clicking the link provided in the email invitation. Additional consent was sought in the questionnaire itself to link to the student's information from the University's central student record database to collect demographic and background information, including gender, age, university entrance scores and GPA. To ensure anonymity, identification codes were used instead of names for the identification of participants throughout the whole study, and variables were collapsed or combined to provide summary measures in the data analysis and reporting processes so that respondents were not identifiable in any circumstances.

4.4 Summary

This chapter has detailed the mixed-method design and methods employed in this study. To understand the students' perspectives of first-year success in the context of Hong Kong higher education, it was necessary to adopt a qualitative method using student focus groups, to allow more in-depth and richer understanding of the students' definitions of success in the first-year of university life. To identify relationships between success domains and understand how different aspects of university experience in driving student success, a large-scale survey was adopted. Ethical issues were discussed for each phase of the study to ensure the validity and the trustworthiness of the entire research process.

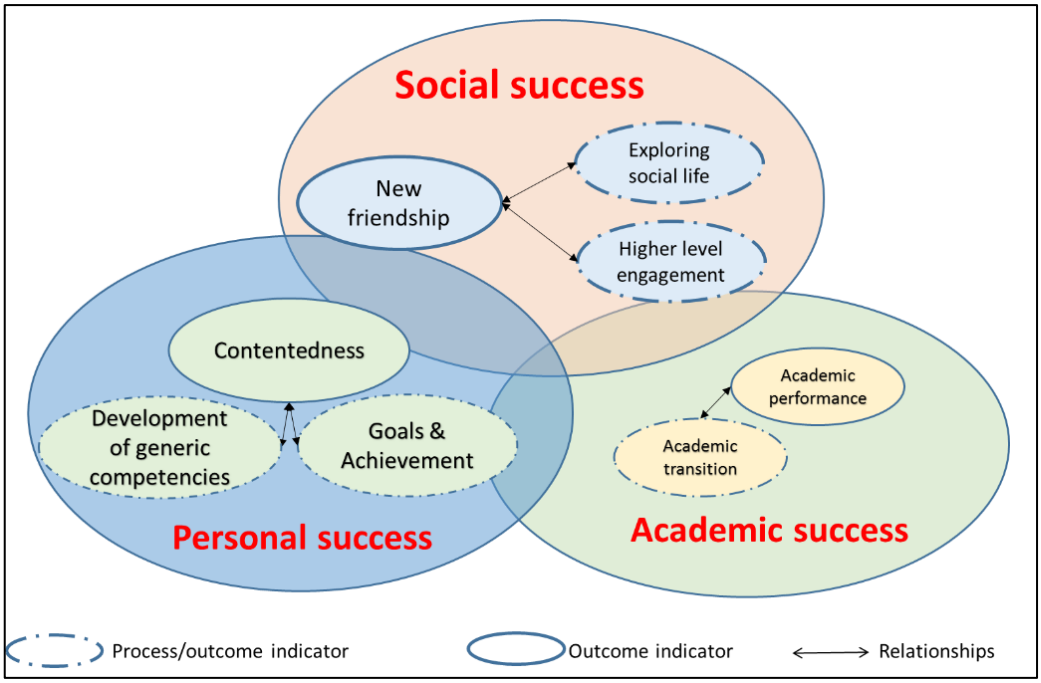
Chapter 5 Findings – The Definition of First-year Success and Its Driving forces

This chapter discusses the findings of both qualitative and quantitative phases. The first part of the chapter presents the results of students' perspectives of success from the student focus groups. The second part focuses on the findings from the large-scale student survey, which aim to identify relationships between student success and its driving forces.

5.1 Qualitative Results

This section presents the findings of the qualitative phase. The data were utilized to answer the research question - What are students' definitions of first-year success? The purpose of this phase of the study was to seek an in-depth understanding of students' perceptions of first-year success. Figure 5-1 presents the definitions of success in three domains, social, academic, and personal success. These first-year students perceived success to be related closely to different aspects of their student lives, in which they had often experienced challenges. Through achieving success in different domains of first-year university life, they saw themselves developing competencies and achieving outcomes in many ways that would allow them to transition into the first year of university, and also prepare themselves for their entire tertiary education.

Figure 5-1 Definitions and themes relating to first-year success



Social success refers to students' involvement and engagement in social aspects of university life. The participants suggested that success in this domain includes making new friends, exploring and participating in social life, and engaging more fully as committee members in university clubs or organizations. Although the levels of engagement they described differed significantly, the students' definitions of social success focused on achievement in any of the activities listed under this domain of success.

Academic success, a common denotation of success, was also included as one of the definitions of first-year success from the students' perspective. This refers to more than academic performance, i.e. subject grades or grade-point-average (GPA). Although the students were aware of the need to obtain good grades in their first-year studies, the ability to adapt and adjust to the academic studies, i.e. academic transition, seemed to be more pronounced in this domain of success.

The third domain of success related to the personal aspect, including the development of generic competencies, setting their own goals and being able to achieve them, and contentedness about university life in general. This domain of success was related to the development of students' independence and progression in life, specifically with regard to personal development, and setting and achieving their own

goals. Thus, an evidence of personal growth. Details of the definition of success in each domain are explored in below section.

5.1.1 Social Success

Social success was the first and most frequently mentioned category in all focus groups, and seems to be the most important of the three domains the students' perceptions of first-year success identified in this phase. According to the students, being able to integrate into the university's social life was an important indicator of a successful first-year student. Although there were other definitions, many students expressed that a first-year student would not be classified as successful without achieving social success. Quite often, there were comments suggesting that students valued social success as a lifelong success, believing that the established social network at university could benefit them even after graduation. Three major themes emerged that represented social success: 1) establishing new friends, 2) exploring social life by participating in social activities, and 3) engaging more fully in social aspects of life by serving on committees in the university's clubs or organizations.

Establishing new friendship

Being able to make new friends was the first theme that emerged under social success; this seemed to be a prominent characteristic of a defined successful first-year student. Students felt that the establishment of new friendships in first year was particularly important, at it helped them through their initial university life, or at the least, they could have someone to spend time with in the unfamiliar environment:

> *"…sometimes it is good to be with friends, to do things together, like going to the same class, tutorial, and they make you feel you are not alone when you are with them on campus…at least you have someone to eat lunch together…"* (Male, Civil Engineering)

One major benefit of developing friendships at university is the mutual support students can give each other. The students perceived that this kind of support helped them not only in their university studies, but also in other aspects of life, particularly when they were stressed or experiencing difficult times. These friendships can be lifelong, going beyond university studies, and support them throughout their life:

> *"Making good friends is so important… we can support each other anytime…like if I forget a deadline or an assignment, they will remind me. Or if I need help, I can call them…it is like a lifetime friendship, that they can support me for the rest of my life…because we are not just friends for first year only, and some friendships can last forever…and you can seek help from them and talk to them when you need or are stressed..."* (Female, Accounting & Finance)

Another commonly described perception of social success was related to student learning. The process of making new friendships provided opportunities to learn from each other, especially for students from different backgrounds. Unlike their secondary schools where student profiles were usually quite homogeneous, i.e., local Hong Kong Chinese, the university environment provides opportunities to meet other from different social and cultural backgrounds:

> *"…we should make some friends, we should get ourselves out of our comfort zone, so that we can hear more ideas because they may have different perspectives… particularly, some students are from different countries, different programmes, so their ideas must be very different, and it can help us to broaden our perspectives."* (Male, Mental Health Nursing)

To sum up, establishing new friendships was an important outcome included in the definition of social success. Good friendships seemed to support students in many aspects of their student lives, including academic work, and the times when they felt stressed or alone. Although the students did not seem to be able to articulate either the

skills required or those developed as a result of making new friends, the process of establishing friendships allowed learning to take place and skills to be developed. They commented that friendships can be lifelong, beyond university life. However, it appeared that developing new friendships in first year was the initial step in social integration and making new friends helped them to smooth the transition and adaptation to university life. Especially at the commencement of the first year when students were exposed to new environments and unfamiliar situations where they often experience uncertainty and stress, having friends or companions with whom to do things helped to ease the feeling of loneliness and uncertainty, and made tough times easier. Once a friendship is established, it can be strengthened through frequent encounters in the next few years of university life. This explains why the students perceived it as an important aspect of success, not only for the entire university life, but also lifelong. In several cases, new friendships evolved from students' involvement in the social aspects of university life. The quality of friendship and level of engagement within this theme were not discussed much in detail in the focus groups, except that students described the new friendships as more being an acquaintance. They referred the new friendships as having someone to talk to, rather than just "hi-bye friends".

Exploring social life

While establishing new friendships was seen as an outcome of social success, social exploration was described more as a process than an outcome. The theme of social exploration refers to the processes by which the students had explored and engaged actively in their social lives during the first year. Participating in the university's clubs and societies was the most frequently mentioned theme under the domain of social success; the students seemed to think that the participation in social activities was a major means to make new friends and to integrate socially with other students. In particular, they mentioned that the many promotion and welcoming activities held during the first two weeks of the university year provided many direct and convenient opportunities for students to explore the social aspects of university life. Moreover, some students described other benefits of joining different social clubs in enriching their first-year experience:

"…I feel that it is a must to join some university clubs or societies in the first year, because you can know more people, particularly those people who are more senior than you…Whenever you have anything that you don't understand, you can get help from them. In general, they are very good and can answer most of your questions" (Female, International Shipping and Transport Logistic)

"I think to be successful, you should participate in various activities to broaden the experience…Clubs and the university organized lots of activities like shows, dancing night, volleyball society, O'camp activities etc…I think joining these clubs or activities is useful to make our first-year life more successful and colourful!" (Female, Construction & Engineering)

Sometimes, success in the process of exploration into the social dimension was related to the psychological determination to make new changes. Many students considered the start of their tertiary education to be a new stage in life and they wanted to make this opportunity to do something they had not done before. For example, it could be a new hobby, or something they had wanted to do but had not had a chance to do in the past. Hence the intrinsic element of making new progress or changes in life was linked to success. In one particular instance, a student talked about the process of participating in social activities as being a way to "push" herself to make a change, regardless of the actual outcomes. The process of exploring the social activities helped her to grow, appreciated her ability to overcome her own shortfalls and widen her perspective in life:

"I think it is very important to join society clubs rather than just studying…it is a kind of training to force yourself, or step out of your comfort zone so that you can experience something different…imagine you go to a social activity, you don't know anyone there, you are not sure what will happen, all these kinds of thing make you wonder do I really want to do this…but then once when you make your first step, even though you may not really enjoy the activities, at least you make some friends, and you look

back, you feel that hey, it's really cool that I have the guts to do something I didn't do before…" (Female, Hotel & Tourism Management)

While it is clear that making new friends was an indicator of success for the first-year students, participating in different social activities or clubs was a process for them to explore social aspects of their university life in order to achieve this success. Making new friends was the first step, at least, in helping them to transition and adapt to the new environment. The process of social participation in university clubs allowed the students to invest more time and effort, i.e. higher levels of engagement, in the social aspects of their first year. There were benefits in this process of social exploration and participation, and the success seemed to be associated with the students' psychological development, i.e. the skills learnt or developed in the process, even though they were not explicitly aware of the skills developed through the process. When they had been able to overcome the fear of trying new things, i.e. 'stepping out of the comfort zone', they felt that they had succeeded in this aspect. In fact, this was associated closely with their concept of success in developing personal competencies, another theme under the domain of personal success. As well, the social exploration and participation was the mediating process to facilitate social engagement, allowing the skills and competencies to be developed, and the students valued this highly as an outcome of first-year success.

Committee work in university clubs and societies

Compared with the previous theme, success in this theme refers to higher level of involvement and commitment in the social aspects of university life. A common example was serving as a committee member in a social club or university society. This theme went beyond merely participating in social activities; indeed, it required more effort from students, in terms of physical commitment (e.g. time spent) and mental commitment, offering service to other students. The students perceived this level of social commitment as an opportunity to learn and the outcomes of success associated with the development of skills and competencies, which relates to personal success described in a later section. The process of serving other students provided them with the opportunity to reflect on themselves and understand their weaknesses and shortfalls, and even helped them to achieve different aspects of success including that mentioned

previously, i.e. establishing new friendships. In addition, they associated this aspect of success closely with other aspects of personal success, as many expressed feeling proud and satisfied with serving the student community, developing skills and competencies that they valued, and learning something that they did not normally learn in the classroom:

> *"…like myself...in the past, I was very impatient, only having "3-minutes enthusiasm", whatever I did, or wanted to do. I would give up easily…but after I became a committee member, I had to commit myself and continue with the responsibility. Even if you experience hardship, you just can't walk away or give up…"* (Female, Building Technology and Management Surveying)

> *"…becoming a committee member, to me, it is my social network and friendship. I started here, met a lot of friends there, really good friends, and it made me feel my existence…"* (Female, Accounting & Finance)

Quite often, success in this theme indicated quite significant engagement with their social counterparts in terms of the amount of time and effort they spent on these activities. As shown in the quotes, this level of commitment provided an opportunity for students to build their social networks and friendships, which they believed could benefit them in the future. This sense of a higher level of engagement also indicated a sense of connection to the university and peers. The role of committee member in university clubs or societies clearly brought the students to a place where they were required to exercise many of their personal skills and competencies to overcome problems and challenges. These findings support those of previous studies of student engagement in demonstrating students' positive outcomes as a result of higher involvement in university clubs or organizations (e.g. Asel et al., 2009; Cooper et al., 1994; Foubert & Urbanski, 2006; Hernandez, Hogan, Hathaway, & Lovell, 1999; Webber et al., 2013). The achievement of success resulted in satisfaction with their personal development or gains in skills and competencies. This is illustrated by the

quotes about turning some ideas they had initially thought impossible into meaningful outcomes, as well as those about the awareness of their own weaknesses.

In summary, the importance of social success accords with Tinto's (1975) studies about dropping out. Tinto suggested that social success is influential in student retention in higher education. He referred to social integration as the degree of connectivity between students and the social dimensions of the college life, including informal peer groups, extracurricular activities and interactions with faculty, staff and university administration. While it is clear that exploring social life commonly referred to participating in social activities, there seems to be a difference in the students' perceptions of the success outcomes of participating in social activities and being part of a committee in a social club, in terms of the level of engagement. Social exploration seemed to have required less time and effort than committee work. The students tended to associate success in the process of participating in different social activities with the initial steps in personal growth that were important to them when they were exposed to the new environment (e.g. stepping out of the comfort zone). In contrast, committee work in university clubs or societies often required them to serve others, and the success referred to the gains in personal competencies. Although both categories were perceived as be success by students in their first year, there was an incremental level in student commitment and engagement that they experienced from social explorations to engaging highly in university clubs by being committee members. In addition, two themes referred to the development of friendships. Social exploration was likely to help students to establish new friendships, and higher levels of social engagement helped them to build up the friendships, to make them stronger and even to extend their social networks during and after their university studies.

5.1.2 Academic Success

Consistent with the literature on student success (e.g. DeBerard et al., 2004; Mills et al., 2009; Strauss & Volkwein, 2002), academic performance, commonly measured by subject grades or grade-point-average (GPA), emerged as one important indicator of success in this study. Nevertheless, in this study the concept of academic success also includes students' adjustments and adaptation to their first-year academic studies, i.e. academic transition (see

Figure 5-1), as the student participants said they had often experienced difficulties and required new study habits in adjusting to the university studies. Although academic performance and transition can be related positively, academic transition itself was also an important indicator, indicating, to some extent, the students' achievements in developing new skills and competencies to cope with their academic challenges.

Academic transition

Entering university requires students to adapt to their academic studies quickly. The participants' perceptions of success in academic transition referred to a good adjustment to university studies. They said they were exposed to the new environment, where they needed to quickly get familiar with, for example new learning modes such as reading large amounts of materials, and getting familiarized with different types of assessments and styles of teaching. At the very first level, they students perceived themselves as having been successful if they had been able to adapt quickly to different kinds of new study demands:

> *"I think one of the accomplishments for the first year is to adapt to the university life as soon as possible. It is very different from secondary school…like we have to get used to go to different lecture halls, tutorial rooms, constantly checking emails for subjects and assignment information…and sometimes it's very annoying that different professors do things differently; some do online quizzes, some require us to prepare for classwork, some prefer group work, some do stuff on the blackboard, some on other sources, and you have to get used to different styles of teaching too…sometimes I really worry that I will miss something important and cannot cope with all these different modes…"* (Female, Global Supply Chain Management)

In the process of transitioning into the university studies, it is not difficult to image how many skills students are required to develop in order to manage their study demands, in particular the skills of academic writing, time management, information processing, communication and problem solving (Gerber & Du Plessis, 2012;

Goldfinch & Hughes, 2007; Jansen & Van der Meer, 2012; Upcraft et al., 2008). Imagine when a student is asked to do the first essay at university, going to the library to search for relevant information, reading and analysing large amounts of materials, understanding the citation requirements and the concept of plagiarism, mastering the skills of academic writing etc. This process requires students to develop a range of new skills and competencies in a short period of time. Thus, the interviewees considered they were successful if they could develop and utilize these skills quickly in their first year:

> *"…it [the skill] is not easy, for example, you try to write an essay and find sources to support your arguments, you search in the library, a lot of the time it is not quite relevant, so you need to search it again and again, sometimes different keywords will come up with different information… also some professors required more updated references, and so you just have to try many different ways to get the information you need...sometimes the title of the article seems relevant, but when you read the contents, you are not sure what it is talking about…this can be very difficult and can never end but you must get the hang of it very quickly because you need this all the time in university studies …"* (Male, Social Policy & Administration)

While first-year students often face high academic demands with less structured learning when compared with secondary education, they were required to develop as independent and autonomous learners, and to apply these skills very soon after they started university. The definition of success in academic transition in this study supports the concept of academic integration as a key aspect of success in the literature (e.g. Tinto, 1993), suggesting that adapting to university studies is an integral part of success in the first-year university studies, according to the students' perceptions. No students can escape from the academic challenges of tertiary education, and first-year academic success is driven by the process of how students transition into first-year studies. Thus, success in academic transition seems to be a process in capturing the student experience with a range of academic-related activities, and can be reflected by skills and competencies developed and other success outcomes (i.e. academic performance), as part of the definition of academic success, as explained in the following section.

Academic performance

Academic performance refers to how well students perform academically, indicated predominately by getting good grades or grade-point-average (GPA), or improving one's grades. Academic performance can be a reflection of how well students have succeeded in academic transition. For example, gaining a good grade for an essay assignment requires students to master not only the subject content but also other skills, like finding supporting evidence, analysing different sources and adopting accurate citations and referencing. In other words, students who perceive themselves to be successful in academic transition are more likely to have better academic performances. Consistent with the study conducted by Jennings et al. (2013), many first-year students included good grades as an indicator of academic success, as good grades are often associated with students' goals and objectives. Thus, the achievement of good grades in Jennings' study attached to students' goals in getting into the medical school. Quite often, good academic performance is associated with other successful outcomes, such as getting a scholarship, being able to choose the desired major in the sophomore year, or getting a job after graduation. Grades can be used as selection criteria (e.g. student scholarships) or to show progression in study (e.g. to obtain a certain level of GPA in order to select subjects for the sophomore year), which may explain why the participants perceived good grades as one element of first-year success:

> *"I think to be successful, you need to attain a high GPA, because we have to choose our major in year 2 and very often it depends on our GPA in year 1…and it is really the minimum criterion for many activities at university, like the exchange programme. It's almost like a ticket to the door!"* (Female, Mental Health Nursing)

Good grades traditionally denote student success and have been commonly used in studies reported in the literature (Cholewa & Ramaswami, 2015; DeBerard et al., 2004; Friedman & Mandel, 2011; Mills et al., 2009; Strauss & Volkwein, 2002). The students in this study perceived good grades as demonstrating their competencies and helping them to define their self-worth, as their peers or parents often associate good

grades with success. Some students said they would feel disappointed if they did not receive good grades:

> *"GPA seems to be something that everyone looks at… if you get a good GPA, people think you are good…and I think good GPA shows your competence in mastering the study and it is a way to prove to yourself that you can do it…"* (Male, Construction & Environment)

Interestingly, the definitions of good grades varied across individual students. The students did not refer to a good grade as an absolute value; instead it was the value according to individual expectations. This observation was consistent with the findings of Yazedjian, Toews, Sevin, & Purswell (2008), who reported that some students perceived passing grades as successful while others focused on the underlying effort in getting good grades as being successful.

> *"…unlike students who think a GPA of 3.5 is a good grade, for me, I am already satisfied and feel successful if I can get slightly more than passing grades for all of my subjects, because this shows I am doing okay academically …"* (Male, Surveying)

While academic performance was a prominent outcome in the definition of first-year success, students sometimes perceived this success to be "conditional" and that it should be more than getting good grades (Schreiner, 2010) - a good grade, per se, should not be considered as a success unless it is related to the achievement of the student's goals or the effort made in achieving the goals:

> *"…getting good grades can be said to be successful, but I think it should be more than that…, there are other things like friendship, social life etc., but one thing for sure is that, if you can do other things, while at the same time getting a good grade, then you are successful…"* (Male, Accounting & Finance)

In summary, getting good grades and being able to transition well into academic studies were defined as elements of first-year academic success in this study. However, the definition of good grades was rather abstract and it varied across individual students, depending on their starting points and goals. In terms of academic transition, although students referred to success as being able to adapt quickly to their academic studies in the first year, this success was illustrated by the development of a wide range of skills and competencies, which could be challenging for many first-year students. In particular, the students explained that when they faced the many challenges and rapid changes in university when compared with their secondary school education (e.g. adjusting to different learning modes and styles of teaching etc.), they would consider themselves successful if they were able to get over their difficulties by quickly developing and applying new skills and competencies required for their first-year studies.

5.1.3 Personal Success

Personal success was the third domain in the definition of first-year success. This refers to success in the development of personal competencies (e.g. time-management), goals and achievement, and contentedness with their first-year university lives. University provides an avenue for students to explore and experience, and provides opportunities for them to excel on occasions in all aspects of university life. Often, students require different types of personal skills and competencies to meet with the challenges, including the process of making new friends, participating in social activities, or engaging more fully with social clubs. On the other hand, their academic studies required them to develop different types of study skills, with an emphasis on developing them to be more independent and responsible for their learning, as well as being able to manage all aspects of their lives. The study participants indicated that success in these areas required them to demonstrate their excellence in developing different types of skills required for the first-year university life. Being able to develop and achieve goals was another perceived area of success. The students were aware of the need to make intellectual progress and personal development, and goal setting was a process that helped them to meet with their personal targets. Success in this domain

refers to the ability to develop and set their own goals, allowing them to exhibit their personal growth by planning, taking action and being accountable for their outcomes. Personal success was described as particularly essential, as it demonstrates the development of personal competencies, which are also associated with students' psychological sentiments, evident in their satisfaction about themselves at this life stage. Details are explained as follows.

Development of generic competencies

The students claimed that one prominent feature of university life is the provision of abundant activities for students to explore and participate in. While spending their time on social events and activities, they are also required to spend time attending classes, preparing for lectures and tutorials, doing assignments and group projects, and studying for tests and exams. This is probably a very common phenomenon for many first-year students and several reported struggles in managing all of these activities during the first year (Leese, 2010). Unlike secondary school, where students rely on their teachers to provide guidance or step-by-step instructions, these first-year students were aware that they needed to take more ownership and responsibility for their learning, particularly when it came to studying. They were aware of the importance of being independent, not only for their studies but also in their daily life situations. They noted that they were expected to identify their own problems when facing a challenge, identified solutions and sought help when necessary. There were other generic competencies that the students recognized as important for first-year university life, such as communication skills and inter-personal skills, which were particularly useful when interacting with different people. Thus, success in this theme refers to the development of generic competencies that the students perceived as essential in helping them to survive in their university studies:

> *"I think a successful student must be able to find a balance between academic, social life and other activities…there are too many interesting things to choose from and you have to choose properly…you only have 24 hours in a day…if you spend all the time doing other things except studying, preparing for assignments, group projects etc…you will become a deadline*

fighter…you have to plan and manage your time properly…" (Female, International Shipping and Transport Logistic)

"Sometimes you have to adjust the way you interact with people. For example, how to work together in a group, communicate with others, deal with issues in group work, organize and divide workloads, etc. Often, some groupmates won't listen and you may need to hold your fire, I mean emotionally, when they are not doing things properly... if you can master this well, you are very successful…" (Male, Social Policy & Administration)

The generic competencies (e.g. time management, independent, communication, interpersonal skills, etc.) that the students mentioned seem to be the skills they needed most for their first-year university lives, both in the academic and non-academic dimensions. The development of these generic competencies, although they can be classified under the domain of personal success, can relate to success in academic transition. A typical first-year student may spend the first few weeks to get familiar with different teaching and learning methods, preparing for classes and coursework, and getting to know other students to organize group work, while also exploring and participating different social activities. To cope with these demands during their first-year studies, a sound development of different skills would be perceived as success, as these skills help students to deal with different challenges that they often face during the first year.

Goals and achievement

Being able to develop, set and meet goals or targets was one of the themes that appeared under the personal domain of success. The process of setting goals helped the students to choose where they wanted to go and what they wanted to achieve. Particularly, setting their own goals enabled them to concentrate on what they had to do and what could be improved, as the process often involved planning, identifying actions and solutions, establishing timelines, and assessing and reassessing obstacles to success. A number of studies have shown consistently that first-year students commonly lack skills for responding to time pressures and rely on procrastination or avoidance to deal

with their study demands (e.g. Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013; Goldfinch & Hughes, 2007; Stelnicki, Nordstokke, & Saklofske, 2015). Setting goals helped them to focus on coping with challenges and increased confidence for managing their university lives. This helped them to make progress by planning ahead, making effort to achieve their targets, being aware of their actions and being accountable for every step taken. Although the students appreciated the achievement of their goals, the process involved in developing goals and identifying actions taken seemed to be more instrumental in this personal success. It seems that, sometimes, the students did not care so much about the actual content of the goal; instead, it was the process of developing their competencies in setting goals, and assessing and reassessing different situations and possibilities within certain time constraints in order to achieve the goals. Success in this category placed more emphasis on the process of setting and achieving goals to overcome barriers by planning ahead, taking actions, identifying solutions and being aware of the consequences of steps taken, which resulted in the development of a wide range of personal competencies and life skills that the students thought would be helpful for their personal development:

> *"…at university, we have a lot of freedom and time, I feel that we can think about what we want to do and set our own targets. Perhaps someone's target is studying, another's is going on exchange programmes, and it's all fine as long as you know what your own target is, and you work hard for it… spending the time now to think about what you want to do and how you can achieve it…I feel so wonderful that I have actually done something that I have planned for many years, and I would say that it is successful"*
> (Female, Building Technology and Management)

Although the theme of goal setting was defined under the personal domain of success, it can be associated closely with other domains of success. From the students' viewpoint, success in goal setting focused more on the process of developing personal competencies (it should be noted that the actual content of the goal pertains to other domains of success). In other words, the students made goals in accordance with their personal objectives, which can relate to all aspects of their university lives. For example, they explained that they could develop a goal relating to academic

performance by obtaining good grades, or associate with social life by participating in different university clubs, or even connect with the psychological achievement of making new progress in life, such as "stepping out of the comfort zone" by doing something different, which was described in the previous domain of success. In other words, goal setting seems to be a process, by which the students aspired to equip themselves with skills and competencies for their personal development. The actual goals could be anything that related to different outcomes or aspects of university life:

> *"…getting a good GPA shows you are good academically, but if you set a goal for yourself and you can achieve it at the end, then you are successful…it's just like other outcomes, say learning guitar, because it is a target you set and you work hard according to your plan and stick to the timelines, and at the end you achieve your target, then you are really successful… "* (Female, Civil Engineering)

While goal setting helped the students to accomplish their personal targets, the process of planning and establishing milestones in achieving goals helped them to develop a variety of personal competencies and life skills. Although the students perceived success in this theme as being able to come up with a plan and work accordingly, they were not explicitly aware of the skills required in setting their own goals, which could be an important skill enabling them to achieve their targets for their entire university studies or even after they graduate.

Contentedness

The students explained that, while they had the opportunity to participate in many new and exciting activities, they were busy in adjusting to new living and learning environments, at the same time, they experienced stress, anxiety, fear and even isolation. Feeling contentedness about university life was considered as a success under the personal domain. In fact, student satisfaction has been considered as an important element of student success in a number of studies (e.g. Krause & Coates, 2008; Kuh et al., 2008; Upcraft et al., 2004). For a student to feel satisfied with university life, it

usually requires relatively good adjustment, or a good balance of academic, social or personal lives, or being able to accomplish personal goals. Thus, it is a total measure of all aspects of university life that can be reflected by students' psychological view of success. Not surprisingly, the factors affecting student satisfaction are complex and are multifactorial, varying from person to person, from institution to institution, or even from time to time. The feeling of contentedness encapsulates experiences that the students encountered during their study, associated with students' expectations, goals and achievements, reaching priorities, intellectual development or academic performance:

> *"Being satisfied with your first year is something I see as success… in first year, often we lose control of things, not doing it well, or letting it slip… staying satisfied summarizes if we have done things in the way that we see as important. Like for me, I am good at basketball and I want to be in the university basketball team and help to contribute to the university. This year, we have won many medals and a few championships, I am satisfied with my first year because it is what I wanted to do in this year…"* (Female, Mental Health Nursing)

> *"…staying happy means a lot and it is like an overall measure of how well you have done according to your own targets and goals…for example, some people want to study well, make more good friends, some want to get prepared for their careers, or to have fun, some want to do meaningful things like volunteer work, to be better selves, etc. At the end of the day, you weigh up everything, if you are happy with yourself, look back and have no regrets, then it is already very successful…"* (Male, Social Policy & Administration)

Undoubtedly, the first-year students' lives were a mix of interrelated academic and social experiences. Although student contentedness was an overall measure, as described in the literature review, it can reflect how the students felt about their achievement of success in other domains. For example, those who were satisfied with their first-year university life may have performed well in their academic studies, or had good social lives, developed a wide range of generic competencies during their

transition, or have accomplished their own goals and targets. Contentedness was included as part of the first-year success, indicating that the students considered the importance of well-being in their personal and university lives. Although it was a general description of the students' psychological states, it captured in a nutshell how well they felt about student life, taking into consideration different aspects of university experiences, an essential indicator for a measure of success.

5.1.4 The Complexity of Success

Although first-year success was categorized into three distinct domains, the findings show that success is multifaceted and overlapping with multiple domains including social, academic and personal. Relationships can be found not only within individual domains of success, but also across domains of themes (see Figure 5-1). These relationships, however, are not shown in the thematic map in Figure 4-1 because they may vary across individual students. For example, one student may relate satisfaction to many other success indicators, while another may only associate it with new friendships. In addition, the domain of personal success seems to be related closely to both academic and social success, to the extent that personal success can be either an antecedent or an outcome of first-year success. In the former situation, themes under the personal domain (i.e. development of generic competencies or goals and achievement) can be seen as a process in facilitating accomplishment in other domains of success. For example, setting goals helped the students to achieve better academic performances while developing personal competencies that could help them to transition into their academic studies. On the other hand, personal success by itself can be an outcome of success; student contentedness was evident as a result of achieving success in other domains. For example, students who achieved good academic performances would feel higher satisfaction with university life, perceiving success in academic transition would allow them to master a range of personal competencies as successful outcomes.

Similarly, an interrelationship can be observed between the domains of personal success and social success. Students who have successfully established new friendships, or engaged in higher levels of social activities during first year could demonstrate higher satisfaction and development of personal competencies. Exploring social life could also facilitate personal success; this can be seen in one quote, in which a student

described success as being able *'go beyond his comfort zone'* to try out different social activities (p. 91). The themes under social success formed an outcome which was driven by the components of personal success. For example, one student mentioned success in engaging in committee work in university societies by developing a personal commitment and responsibility for her actions. Although she perceived this success to be associated with social aspects, personal development was also part of the outcomes that evolved from the success. This suggests that these three domains of success were interrelated and that the definition could vary across different domains of success, even for the same phenomenon. Quite often, this categorization of success rested in the actual outcomes of success perceived by the students. If the outcome is related to social aspects, it can be classified easily as social success. If students emphasize their success in setting goals and achievements that relate to their own development, then this could be seen as personal success.

While it is clear that students' perceptions of first-year success intertwined with multiple aspects of university life, success can be seen as a combination of separate domains. In other words, some students might feel successful in all domains but some might experience success in just one and difficulties in others. For example, one student might feel successful to have achieved good subject grades (i.e. attaining academic success). Other students, however, may feel that they have to achieve both social and academic success in order to be consider as successful in the first year. Thus, the criteria and perceptions of success are relative and vary across students, depending on their starting points and achievements.

5.1.5 Summary of Qualitative Findings

The findings from phase one showed that the students, in general, related first-year success to three aspects of their first-year university lives, with success being a holistic concept encompassing the overlapping domains of social, academic and personal. Although each aspect of success is defined individually as a separate entity, first-year success is multi-dimensional and interrelated across different aspects of university life. Success indicators from the three domains were developed and used in the student survey in the next phase of the study, which set a foundation for the

investigation of the forces driving the defined success, of which the findings are presented in the following session.

5.2 Quantitative Results

This section presents the findings of the quantitative phase. The data were analysed to answer the two research questions as specified in this phase of the study. The demographic characteristics of the population and the sample were compared, followed by presentations of the results relevant to each research question.

5.2.1 Demographic Characteristics of Participants

This study achieved an overall survey response rate of 45.6%. A general response rate for electronic surveys of general populations range from 15% to 29% (Comley, 2000; Ilieva, Baron, & Healey, 2002). The response rate for a more formal university electronic survey is usually higher, with an average of approximately 30% to 40% (Porter & Umbach, 2006; Shih & Fan, 2008). Thus, the study achieved a relatively high response rate when compared with similar context in the setting of university electronic survey.

Table 5-1 displays the profile of the participants in this study and the population of all first-year university students in the studied institution. In general, the sample had slightly more female participants than the population (53.3% versus 50.6% in the population). The age profile of the participants and their university entrance scores were very similar when compared to the population. However, the sample had a slightly higher proportion than the population in the upper range of GPA from 3.0 to 4.0 (53.7% versus 49.0% in the population). Since the profile of participants was similar to the population in terms of demographic characteristics in gender, age and university entrance performance, it could be regarded as a representative sample that would allow the results to be generalized to a larger population with similar characteristics and settings.

Table 5-1 Profiles of the population and sample of participants

Description	Percentages	
	Population	Sample
Gender		
Female	50.6	53.3
Male	49.4	46.7
Age groups		
16-<18	19.4	19.1
18-<20	67.9	69.1
20-<22	10.7	10.0
22+	2.1	1.8
University admission scores*		
<20	3.1	3.4
20-24	68.4	67.4
25-29	22.1	22.5
30+	6.4	6.7
GPA		
<=2.0	2.9	1.6
2.01 – 3.0	48.1	44.7
3.01 – 4.0	49.0	53.7

** Summation of the best five subjects in the DSE scores (score 1-5 equivalent to grade 1-5, score 6=5*, score 7=5**)*

5.2.2 Descriptive Statistics of the Predictors

To understand how first-year students perceived their experiences in multiple dimensions, descriptive statistics were computed. Table 5-2 presents the mean scores and standard deviations for each of the predictors.

Table 5-2 Descriptive statistics of aspects of first-year university experience

Aspects of first-year university experiences	Mean	SD
Institution-related		

Sense of belonging*	3.5	.6
Perceived support*	3.4	.6
Personal-related		
Gains in personal development*	3.6	.6
Engagement in personal activities (hours per week)	16.7	17.5
Part-time work (hours per week)	13.9	16.4
Social-related		
Frequency of peer interaction#	2.5	.5
Social engagement (hours per week)	17.5	16.7
Academic-related		
Success in academic transition*^	3.0	.6
Frequency of faculty interaction#	2.2	.6
Academic engagement (hours per week)	29.3	18.0

** Items measured on 5-point scale; # Items measured on 4-pont scale; ^ reverse scale*

For all four aspects of university experiences, the mean score for the gains in personal development was 3.6 (with SD 0.6), indicating that, in general, they perceived they had made adequate gains in their personal development during the first year. These gains included critical thinking, problem solving, leadership, interpersonal skills, information-literacy skills, self-understanding, educational and career goals, adopting a healthy lifestyle and independence in their studies. Appendix 12 shows the descriptive statistics for all the items in detail. Conceptually, this construct of personal development consisted of a number of different types of competencies. From a practical point of view, there may be a need to examine each type of personal competency closely in future studies and to explore the institution's priorities for developing and enhancing them.

The sense of belonging, under institution-related factors, had a mean score of 3.5 (with SD 0.6), suggested that students in general rated their sense of belonging slightly above neutral, but did not suggest that they felt attached or a sense of belonging to the university. Similarly, ratings of perceived support (mean 3.4 with SD 0.6)

showed that the students were slightly above neutral in their perceived support provided by the university. While other research has shown that sense of belonging and institutional support are important in driving student success (Strayhorn, 2012; Hausmann et al., 2007), the findings from this study suggested a need to increase first-year students' sense of belonging and their awareness of institutional support, in particular if these factors are important in driving all domains of success.

For the social-related factors, the mean score for the frequency of peer interaction was 2.5 (SD 0.5), suggesting the time spent with peers on different activities ranged from "a little" to "a lot". In other words, while some students were probably spending "a lot" of time with their peers, there were others spending only "a little" time together. This finding was also supported by the number of hours spent in social engagement (average 17.5 hours per week, with SD 16.7). This large standard deviation suggested a significant variation in the students' engagement in social activities. As peer interaction has been identified in other studies as important in helping students to adapt to university, reducing the likelihood of departure and leading to better academic performance (e.g. Ribera et al., 2017; Yorke, 2004), attention should be paid by higher education institutions to provide inclusive opportunities for students who want to spend more time with their peers.

The mean rating for the construct of success in academic transition was 3.0 (SD 0.6), indicating that, on average, the students were neutral about their success in academic transition. However, the standard deviation suggested that, while some students rated this construct slightly above neutral, there were others who did not rate their academic transition as successful. In other words, some students had difficulties with their academic transition, including adjusting to different types of university learning and teaching methods, coping with different assessment types, or managing the time between studies and different activities. This finding may possibly relate to their engagement in academic activities and frequency of faculty interaction. The average numbers of hours spent on academic-related activities was 29.3 per week (SD 18.0), but the range was from as little as 11 hours to as many as 47. The mean score for the frequency of faculty interaction (Mean 2.2, SD 0.6), suggested that students, on average, interacted with faculty staff "once to a few times a semester" outside normal teaching hours. These interactions mainly included informal visits outside class, communication via email or other channels, visiting the staff members' offices or

asking teaching staff for information related to their courses. While the results indicated some students spending significant amounts of time on academic-related activities or having more interactions with faculty, there were others who had spent very little time or had very little interaction with faculty related to academic activities.

In summary, the statistics showed that, for each aspect of first-year university experience measured in this study, there was a range of levels of student engagement. While some students had spent a fair amount of time in engaging with their faculty and peers, or in their academic and social lives, others were not engaging as much as they should be with the institution. This finding certainly poses implications for both policy and decision makers to consider how institutions can support student success, and prompts further investigations of different types of success and their predictors, an investigation reported in the following sections.

5.2.3 Nature of the Domains of Success

This section presents the descriptive statistics and investigates the relationships between the three domains in an attempt to answer the third research question.

Table 5-*3* shows the mean scores and standard deviations for each item within the three domains of success.

Table 5-3 Descriptive statistics for success by domains

Description	**Mean**	**SD**
Social success	**3.4**	**0.8**
Making new friends during first year	3.6	0.8
Participating social activities during first year	3.4	0.9
Level of involvement in serving social clubs/societies	3.3	0.9
Social life during first year	3.4	0.9

Academic success	**3.3**	**0.8**
Academic performance during first year	3.2	0.9
Adjustment to university learning	3.4	0.8
Personal success	**3.5**	**0.7**
Overall quality of first-year experience	3.5	0.8
Overall gains in learning	3.6	0.7
Smooth transition from secondary school to university	3.5	0.9

Remarks: rating scale is 1=very dissatisfied, 3=generally satisfied, 5=very satisfied

Quantitatively, students' perceptions of success in the social, academic and personal domains were quite similar, indicating that they were generally satisfied with their achievement of success in all three domains. However, the standard deviations showed that there were some variations in students' responses, indicating that while some were satisfied, others were dissatisfied with their success in the three domains. A bivariate correlation analysis was conducted to gain further understanding about how these domains are related. The findings are presented in

Table 5-*4*, in an attempt to answer the second research question of this study: *What is the relationship, if any, between different domains of success as defined in the previous phase of study?*

Table 5-4 Pearson's correlation between the three domains of first-year success

	Social success	Academic success	Personal success
Social success	1	0.580**	0.636**
Academic success	-	1	0.635**
Personal success	-	-	1

*Person's coefficient for bivariate correlation was used. ** Statistically significant at 0.01 level*

The results indicated that the three domains of success were all statistically correlated at the 0.01 level of significance. Personal success had relatively stronger correlations with social and academic success, i.e. the Pearson's coefficients of 0.636 and 0.635 respectively, indicating that students who were satisfied with their personal success also tended to be satisfied with the other two domains. Nevertheless, a relatively lower correlation was observed between academic and social success, although the difference was not large (i.e. the Pearson's coefficient 0.580), suggested that the relationship between academic and social was comparatively weaker. The moderate magnitude of these associations suggested that first-year success in social, academic and personal aspects was interrelated and that students who perceived success in one domain tended to perceive it in other domains; in particular, the relationships of personal success with other aspects were relatively higher.

To further understand the relationship between different domains of success, an exploratory factor analysis was employed. A principal components method with varimax rotation was adopted, to allow the reduction of a large number of variables into constituent components by examining the variance in the model that could be reproduced by the synthetic variables (or latent variables) underlying the measured variables (Kaiser, 1958). Table 5-5 presents the results of the factor analysis (with rotated component matrix) of the success variables.

Table 5-5 Factor analysis of success variables

Rotated Component Matrix[a]		
	Component	
	1	2
[d. participating social activities at first year]	.861	*
[e. my level of involvement in serving the social clubs/societies]	.821	*
[f. my social life during first year]	.814	*
[c. making new friends during first year]	.762	*
[x. overall gains in your learning]	*	.797
[w. Make a smooth transition from secondary school to university]	*	.760
[h. my adjustment to university learning]	*	.753
[g. my academic performance at first year]	*	.712
[b. overall quality of your first year experience at PolyU]	*	.662
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]		
Rotation converged in 3 iterations. Remarks: Loadings less than .4 are omitted		

The results of the factor loadings and Cronbach's alphas showed that all the items used in the three domains of success produced two distinct scales describing students' perceptions of success. All the social success items loaded on one single dimension while the academic and personal success items loaded on the other dimension. The results of this analysis suggested that academic and personal success can be combined to represent a wider perspective of success comprising these two domains, as defined in the qualitative phase. Nevertheless, each domain of success was considered as a separate entity to allow understanding of the driving forces in each domain of success for institutional and practical implications.

5.2.4 Factors Influencing First-year Success in Each Domain

This section attempts to answer the research question - *To what extent do different aspects of university experience influence each domain of success in the first year of higher education?* A separate hierarchical regression analysis was computed to

investigate the factors influencing each domain of first-year success, as defined in this study. Independent variables were entered in the model under five steps. Step-1 consisted of student characteristics, step-2 was academic-related experiences, step 3 was social-related experiences, step 4 was personal-related experiences, and step 5 was institution-related factors (see Table 4-4). The results of the regression model for each domain of success are presented below.

Social Success

The final hierarchical linear regression model, containing all the independent variables, gave an adjusted R^2 of .592, thus explaining 59.2% of the variance in the model (see Table 5-9). Students' background information (i.e. step-1), the covariates, produced an adjusted R^2 of 0.16. Thus, the majority of the explained variance in social success was attributed to different aspects of university life (i.e. academic-related, social-related, personal-related and institution-related factors) at first year and only a small proportion to students' characteristics or their academic performances. Academic-related factors (i.e. step-2) explained an additional 8.0% of the variance, while social-related experience (i.e. step-3) contributed the most, an additional 23.2% of explained variance, to social success. Personal-related factors (i.e. step-4) and institution-related experiences produced an additional 15.0% and 10.7% of variance respectively, in the model of social success. Table 5-6 reports all variables included in the final, reduced regression analysis. The standard coefficient (i.e. beta β) is the strength in predicting the influence of the independent variables on the dependent variable (i.e. social success) and the positive beta coefficient suggests positive relationship between independent and dependent variables.

Table 5-6 Summary of hierarchical regression analysis in predicting social success

	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Step-1 (background info)	-.001	.022	-.002	-.010	.021	-.015	.014	.018	.021	.025	.016	.037	.014	.014	.021
Age	-.074	.048	-.049	-.106	.046	-.070*	.017	.041	.011	-.029	.037	-.019	.007	.032	.004
Gender	.030	.008	.128***	.031	.008	.134***	.016	.007	.069*	.006	.006	.028	.002	.006	.009
U entrance score	.009	.066	.005	-.0039	.064	-.021	.103	.057	.057	.052	.051	.028	.019	.045	.011
First-year GPA															
S-2 (Academic-related)															
Academic transition				0.093	0.037	0.078*	.068	.032	.056*	.046	.029	.038	.056	.025	**.047***
Faculty interaction				0.372	0.043	0.271***	.045	.041	.033	-.025	.037	-.018	-.064	.033	-.047
Academic engagement				0.002	0.001	0.042	-.004	.002	-.083*	-.005	.001	-.115**	-.004	.001	**-.098****
S-3 (Social-related)															
Peer interaction							.775	.044	.552***	.554	.041	.394***	.371	.038	**.264****
Social engagement							.002	.002	.053	.008	.002	.166***	.006	.002	**.130****
S-4 (Personal-related)															
Gains in personal development										.508	.031	.434***	.201	.034	**.171****
Part-time work										-.004	.003	-.074	-.003	.002	-.061
Engagement in own activities										.000	.003	-.004	.002	.002	.040
S-5 (Institution-related)															
Sense of belonging													.552	.039	**.465****
Perceived support													.034	.035	.029
Adjusted R^2		.016			.096			.328			.478			0.592	
F for change in R^2		4.868**			29.53***			168.335***			93.324***			134.330***	

*N=974; *p<.05. **p<.01. ***p<.001*

Several features in Table 5-6 are notable. First, sense of belonging, under institution-related factors, was by far the most powerful predictor in the model. This sense of belonging scale, consisting of a sense of belonging to the institution and department, included making a lot of new friends, feeling connected with professors and fellow students, taking more responsibility for their own studies and having sufficient opportunities to take part in co-curricular activities. The sense of belonging scale was the single most significant predictor of the students' perceptions of social success (i.e. β=.465). In other words, those who reported a good sense of belonging to the institution or department, who made a lot of new friends, felt connected with professors and fellow students, who took more responsibility for their own studies and felt that they had sufficient opportunities to participate in co-curricular activities, were more likely to feel they had achieved social success in their first year.

Second, all social-related variables were statistically significant and contributed positively to social success. The social-related factors included peer interaction and social engagement (i.e. β=.264 and β=.130 respectively). Students who reported more frequent interactions with peers, or being engaged in social activities, tended to perceive success in the social aspect of first-year university life more strongly than the students who had less interaction with peers, or less engagement in social activities. The findings supported Astin's (1984) involvement theory, demonstrating that high social engagement and frequency in interacting with peers facilitate social success.

Third, gains in personal development, under the personal-related factor, were statistically significant and a positive influence on social success. The relatively high beta weight (i.e. β=.171) suggested that students who perceived higher gains in personal competencies were more likely to report social success. These personal competencies included interpersonal skills, critical thinking skills, independence, problem-solving skills, setting their own goals, and maintaining a balanced lifestyle. The importance of personal development was also supported by the literature, associating the development of personal skills to a range of positive outcomes including academic competencies, satisfaction, positive first-year experiences and retention (Bitzer, 2005; Jama, 2018; Turner & Thompson, 2014).

Fourth, although two of the scales under academic-related factors had statistically significant relationships to social success, their contributions were notably smaller than other aspects of first-year experiences. The two scales were success in academic transition and academic engagement. Students who experienced better academic transitions tended to report

social success more than those who experienced more difficulties in academic transitioning. However, academic engagement produced negative beta weights (β=-.098) and the reason for the negative beta is not entirely clear. This relationship may be statistical artefacts, attributable to suppressor effects. Thus, the statistical significance of this variable may due to the addition of a predictor in the model. The negative influence of the academic engagement (e.g. spending time on studying, preparing for class), however, might have been associated with students' reports about their academic engagement; it may have been a function of time as a finite commodity, as discussed in the previous chapter. Thus, the students engaged in academic activities may have limited the time that they could spend on social activities. As a result, they were less likely to perceive themselves to have achieved social success in their first year.

Finally, none of the student background characteristics (i.e. step-1) were statistically significant, suggesting that social success is attributed different aspects of students' experiences of during their first year at university rather than the characteristics that they brought with them to university (e.g. age, gender, university entrance score) or their academic performances during their first-year study.

Academic Success

The final hierarchical linear regression model, containing all the independent variables, gave an adjusted R^2 of .435, explaining 43.5% of the variance in the model (See Table 5-7). Students' background information (i.e. step-1), the covariates, produced an adjusted R^2 of .082. Thus, the vast majority of the explained variance in academic success was attributed to different aspects of university life during first year (i.e. academic-related, social-related, personal-related and institution-related factors) and not to students' characteristics or their academic performances. Academic-related factors (i.e. step-2) explained an additional 9.4% of the variance, while social-related experience (i.e. step-3) explained an additional 6.8%. Personal-related factors (i.e. step-4) contributed the most, explaining an additional 15.1% of the variance in the model. Institution-related experience produced the least variance, contributing 4.0%, in the model of academic success.

Table 5-7 Summary of hierarchical regression analysis in predicting academic success

	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Step-1 (background info)															
Age	.012	.021	.017	.001	.020	.002	.015	.019	.022	.019	.017	.028	.009	.017	.013
Gender	.089	.047	.059	.064	.044	.043	.130	.043	.086**	.080	.039	.053*	-.100	.038	**.066****
U entrance score	.011	.008	.049	.013	.008	.056	.005	.008	.020	-.007	.007	-.029	-.008	.007	-.033
First-year GPA	.472	.064	.260***	.404	.062	.223***	.484	.061	.267***	.453	.055	.249***	.432	.053	**.238*****
S-2 (Academic-related)															
Academic transition				.180	.036	.149***	.166	.034	.138***	.159	.031	.132***	.165	.030	**.137*****
Faculty interaction				.362	.042	.263***	.184	.044	.134***	.100	.040	.073*	.061	.039	.044
Academic engagement				.003	.001	.071*	.000	.002	-.001	-.003	.002	-.067	-.002	.002	-.056
S-3 (Social-related)															
Peer interaction							.420	.046	.298***	.197	.044	.140***	.115	.045	**.081***
Social engagement							.002	.002	.036	.001	.002	.018	.000	.002	-.008
S-4 (Personal-related)															
Gains in personal development										.513	.033	.436***	.306	.041	**.261*****
Part-time work										.006	.003	.129*	.006	.003	**.132***
Engagement in own activities										-.001	.003	-.013	.001	.003	.014
S-5 (Institution-related)															
Sense of belonging													.229	.046	**.193*****
Perceived support													.152	.041	**.129*****
Adjusted R^2	.082			.176			.244			.395			.435		
F for change in R^2	22.596***			38.134***			44.010***			81.621***			34.308***		

*N=974; *p<.05. **p<.01. ***p<.001*

Several features in Table 5-7 are notable. First, unlike social success, two variables under students' background characteristics were significant in leading to academic success. These were gender and first-year academic performance. Male students were more likely to perceive themselves to have achieved academic success than female students did. These results were consistent with a number of studies, that students' characteristics, e.g. gender and university entrance scores, are significant predictors of success outcomes including student retention, persistence, academic performance and satisfaction (e.g. Eisenberg et al., 2013; Pascarella, 1995; Tinto, 1987). Nevertheless, the impact of students' characteristics was low when compared with other predictors.

Second, two scales under personal-related factors, namely perceived gains in personal development and engagement in part-time work, were significantly influencers of academic success. In particular, personal development gain was the most significant predictor, as indicated by its high beta weight (i.e. β=.261). In other words, students who perceived higher gains in a range of personal competencies, such as critical thinking skills, were more likely to be satisfied with their academic success. Interestingly, engagement in part-time work also impacted positively on academic success. One possible explanation may be the development of personal competencies resulting from engaging in part-time work; some students seem to have perceived that these skills helped them to achieve academic success. For example, students who engaged in part-time work may have developed better time management, which would be helpful for their academic studies.

Third, while success in academic transition was a statistically significant, positive contributor to academic success, it was surprising to note that neither of the two constructs of faculty interaction and academic engagement were significant in driving academic success. In other words, students who were more engaged in academic studies, or those who were interacted more frequently with faculty, did not seem to have any higher level of association with academic success. This could possibly have been because the students who spent more time on studying may have done so because they found their studies more difficult, and thus they may not have performed as well academically. Furthermore, students who experienced less difficulties in adjusting to the teaching and learning methods at university, coping with different types of assessments, managing their time for studies and other activities and being able to manage their workloads, were more likely to succeed in their academic studies. In addition, peer interaction was marginally significant, indicating that the students who were more engaged with peers, including spending time studying together, tended to report higher

perceptions of academic success. Finally, both factors under institution-related factors, namely sense of belonging and perceived institutional support, were statistically significant in leading to academic success. Students who were more attached and felt a sense of belonging to the university, or were aware of support and knew where to turn for help when encountering problems in their academic studies, were more likely to succeed in their university studies.

Personal Success

The final hierarchical linear regression model, containing all of the independent variables, gave an overall adjusted R^2 of 0.703, explaining 70.3% of the variance in the model for personal success (see Table 5-8). Students' background information (i.e. step-1), the covariates, produced an adjusted R^2 of .04, the least for all three models. Thus, the vast majority of the explained variance in personal success can be attributed to different aspects of university life (i.e. academic-related, social-related, personal-related and institution-related factors) during the first year and not to students' characteristics or their academic performances. This finding was consistent across all domains of success, suggesting that support for success is relevant to all students, even though it may differ according to their backgrounds. The nature of "best support" may differ according to students' backgrounds, but it is clearly important to consider all demographics. Academic-related factors (i.e. step-2) explained an additional 9.9% of the variance, while social-related experience (i.e. step-3) and institution-related factors (step-5) contributed an additional 8.8% and 4.9% respectively in the explained variance of the model. Personal-related factors (i.e. step-4), as expected, contributed most, and attributed to an additional 42.7% of the variance in personal success. Table 5-8 reports all five models of the hierarchical regression analyses, including all predictors used in this study.

Table 5-8 Summary of hierarchical regression analysis in predicting personal success

	Step 1			Step 2			Step 3			Step 4			Step 5		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Step-1 (background info)															
Age	-.026	.020	-.042	-.036	.019	-.057	-.022	.018	-.034	-.009	.012	-.014	-.018	.011	-.028
Gender	.004	.043	.003	.031	.041	.023	-.043	.040	-.031	.029	.027	.021	.008	.025	.006
U entrance score	.015	.008	.071*	.017	.007	.078*	.009	.007	.042	-.007	.005	-.034	-.009	.004	**-.042***
First-year GPA	.262	.060	.158***	.203	.058	.122***	.266	.056	.160***	.200	.038	.121***	.179	.035	**.108****
S-2 (Academic-related)															
Academic transition				.142	.033	.129***	.127	.032	.115***	.103	.021	.093***	.109	.020	**.099****
Faculty interaction				.365	.039	.290***	.182	.041	.145***	.065	.028	.052*	.031	.026	.025
Academic engagement				.002	.001	.047	.000	.001	.000	-.003	.001	-.077	-.003	.001	-.064*
S-3 (Social-related)															
Peer interaction							.448	.043	.349***	.104	.030	.081**	.010	.030	.008
Social engagement							-.001	.002	-.018	.003	.002	.079*	.002	.001	.052
S-4 (Personal-related)															
Gains in personal										.790	.023	.736***	.586	.028	**.546****
development										.001	.002	.032	.002	.002	.037
Part-time work										-.001	.002	-.027	.000	.002	.003
Engagement in own activities															
S-5 (Institution-related)															
Sense of belonging													.272	.030	**.250****
Perceived support													.108	.027	**.100****
Adjusted R^2	0.40			0.139			0.227			0.654			0.703		
F for change in R^2	11.027			38.468			55.650			398.670			79.541		

*N=974; *p<.05. **p<.01. ***p<.001*

Several features in Table 5-8 are notable. First, unlike social success, two variables under students' background characteristics were significant in leading to personal success. In particular, first-year GPA, as indicated by the beta weight, had a moderate influence on personal success. The university entrance score was marginally significant (i.e. p-value of 0.042) and produced a negative beta weight (i.e. -0.042). Again, this relationship may be statistical artefacts, attributable to suppressor effects. The negative influence of the university entrance score, however, might reflect that the students who were more satisfied with social success may not have paid as much attention to their academic performances as to other aspects of university life.

Second, perceived gain in personal competencies, under personal-related factors, was significant and highly predicting personal success, as indicated by its high beta weight (i.e. β=.546). In other words, personal success is driven strongly by the perceived gains in developing a range of personal competencies, such as critical thinking skills. In particular, these gains encapsulate students' growth, progress and their developmental capabilities in their tertiary studies (Rodgers, 1990), indicating that it is one vital aspect of students' first-year success. Interestingly, none of the social-related factors were statistically significant in this model, as one would expect that these constructs could facilitate intellectual growth, resulting in higher satisfaction with personal success as demonstrated by other studies (Astin, 1993**;** Pascarella & Terenzini, 2005; Terenzini et al., 1996). One possible explanation may due to the nature of personal success, as the qualitative findings suggested that the students defined personal success in relation to the development of competencies resulting from their involvement in different activities. Thus, interaction with peer and social engagement may lead indirectly to personal success, as indicated by the qualitative findings, while these predictors exert direct influences on social and academic success, as suggested by the regression analyses.

Third, two of the scales, under academic-related factors, were statistically significant in the model. These were success in academic transition and academic engagement. Students who experienced better academic transition into the first year, including having fewer difficulties in adjusting to teaching and learning methods at university, coping with different types of assessments, and managing their own time for studies and other activities, were more likely to achieve personal success. One possible reason may be that students who have fewer difficulties in academic transition might be more competent and capable in academic studies in general. As a result, they may be more likely to feel success in the personal dimension.

Nevertheless, the negative beta weight in academic engagement (β=-.064) suggested a negative influence on personal success. In other words, students who were more engaged academically were less likely to be satisfied with their personal success. One possible explanation might be that spending more time studying may have left insufficient time for holistic development, or students who required more time studying may have found their courses more difficult. Thus, they may have perceived themselves as being less competent, resulting in lower satisfaction with their personal success.

Finally, both factors in the category of sense of belonging and perceived support, under institution-related factors, were statistically significant to personal success. Similar to success in other areas, students who experienced personal success tended to feel more attached and a sense of belonging to the university, and were aware of support such that they knew where to turn for help when encountering problems in their university lives. This finding resonates with the literature demonstrating the importance of sense of belonging for first-year students, affecting their transition, social and academic integration, academic performance, retention and persistence (e.g. Davis et al., 2019; Hayman et al., 2017; Strayhorn, 2012). Thus, the findings clearly demonstrated the importance for higher education institutions to create supportive, caring and belonging communities for students in order to drive success in social, academic and personal domains.

5.2.5 Summary of Quantitative Findings

A number of phenomena were observed in this phase of the study. First, the three domains of first-year success were statistically correlated. Students who were perceived to be successful in one domain tended to perceive themselves to be successful in other domains. These findings corroborated the qualitative study, indicating that students' definitions of success are intertwined with the social, academic and personal aspects of their university lives.

Second, some specific aspects of the first-year experience contributed more strongly to their related domains of success. For example, social-related experience (e.g. social engagement and peer interaction) contributed most to the social domain of success (i.e. explained 23.2% of variance in the model of social success) while personal-related factors (e.g. perception of learning gains) contributed 42.7% of the total variance to the regression

model of personal success. Similarly, academic-related factors (e.g. academic engagement, transition to university and faculty interaction) contributed most to academic success (i.e. 9.4% of the variance).

Third, different types of predictors impacted differentially, to a certain extent, on the domains of social, academic and personal success. For example, peer interaction had a much higher impact on social and academic success, while students' awareness of institutional support played a more influential role in personal and academic success. Thus, first-year success was influenced by multiple aspects of student experiences in the first-year of university life.

Fourth, several predictors were particularly influential in driving all domains of success in the first year. The results showed that the driving forces for first-year success are multi-faceted, related to institutional, personal and academic aspects including students' sense of belonging to the institution, gains in personal development and success in academic transition. These findings were consistent with the literature, showing that students often perceived success in overcoming challenges from multiple domains of their first-year experience.

Finally, student's characteristics (i.e. gender) and academic performance (i.e. university entrance scores and first-year GPA), although some were statistically significant in both academic and personal domains, played a much more minor role in driving all domains of success. These findings suggested that student success is driven by what and how students are being engaged with the institution, along with the social and academic aspects of university life. Thus, the provisions made by the higher education institution play a vital role in leading student success, particularly if there are extensive opportunities and encouragement for students to engage and be involved in all of the different dimensions of university life in the first year.

In the next chapter, the discussion integrates what has been learned from this study in relation to the literature on student success and to the factors that drive the first-year experience. The chapter discusses the results of both the qualitative and quantitative phases, and relates the findings to the context of higher education, in addition, to demonstrate the significance of this study's findings to enhancing first-year success.

Chapter 6 Discussion of the Findings

This chapter discusses and triangulates the findings on student success and the driving forces presented in Chapters 4 and 5. The core investigation of this study explored students' definitions of first-year success and identified factors that influenced this success in the first year of university studies. This chapter begins with a brief summary of the findings in order to answer the three research questions of the study. A critical comparison is made of the students' perceptions of first-year success in this study with other findings reported in the literature. This is followed by a close examination of the roles of factors found to drive student success, and to inform the contributions made by this study. The discussion is organized in such a way as to reflect my current role, as an educational administrator, taking a pragmatic perspective to seek further understanding of the consequences generated by the findings for supporting first-year students at the institutional level.

6.1 Summary of the Study and Key Findings

The purpose of this study was to understand how first-year students defined their success during the first year of university and to identify factors that influenced this success. A summary of the main findings is presented in the following section to answer the three research questions posed for this study.

Question 1: What are students' definitions of first-year success and how are they related to the first-year university experience?

According to the qualitative findings discussed in Chapter 4, the students' definitions of first-year success were categorised broadly into three domains, social, academic and personal. Social success encapsulates success in establishing new friendships, and students' engagement in the social aspects of university life. Academic success includes academic performance, relating to the development of skills and competencies that allow students to transition into first-year academic studies. Personal success demonstrates gains in student development and the achievement of personal goals. It is related closely to the perception of

personal growth and developmental progress in life, as reflected by students' overall satisfaction with their university lives.

Unlike other studies which commonly focused on a single aspect of student success (e.g. retention or academic performance), this study adopted a holistic perspective of the definitions of success, and recognized the importance of multiple dimensions that influence student success in the first year of university life. The academic, social and personal domains are the areas in which many first-year students often have difficulties and that require the development of certain types of skills and competencies to overcome the challenges.

There is a considerable amount of interplay between the three domains of first-year success. For example, the process of social exploration and engagement with committee work in university clubs provides students with opportunities to establish new friendships. Similarly, interactions with peers and staff in academic-related activities help to facilitate success in academic studies. The involvement of students in all aspects of first-year university experiences, including academic and social interactions, allows whole-person development that includes time management, leadership, autonomy, ethical, interpersonal and independent judgement, and problem-solving skills (Krause et al., 2005; Kuh, 1993; 1995). The theoretical frameworks, i.e. Astin's (1984) involvement theory and Pace's (1984) engagement theory, set the assumptions that students learn through involvement, and that success is achieved through involvement and engagement in the social, academic and personal aspects of university life. While success can be seen as multifaceted, it can be enhanced by engagement in these multiple dimensions.

Question 2: What is the relationship, if any, between different domains of success as defined in this study?

The findings from both the qualitative and quantitative phases described in Chapters 4 and 5 suggested that first-year success is complex, overlapping and linked to different, interrelated domains of success. While strong associations were identified quantitatively between the domains of success, the qualitative findings suggested that elements within each domain of success are highly interrelated. Furthermore, the complexity of success is also indicated by the nature of the elements within each domain, since often these can be success

outcomes, process indicators or both. For example, social success consists of outcome indicators (e.g. establishing new friendships), and process indicators (e.g. exploration of social life), or both (e.g. engagement in committee work in university clubs). While establishing new friendships is a success outcome on its own, at the same time, it can be facilitated through the process of social exploration and engagement in committee work in university clubs. On the other hand, success in academic transition can be an aspect of success on its own, or a result of good academic achievement. Similarly, personal success can be defined by either the outcomes or processes of the gains in the development of generic competencies or the achievement of goals and purposes, which are related to students' overall satisfaction with the first year of university life. Thus, the nature of the success indicators illustrates further the complicated interrelationship of first-year success.

The complexity of first-year success was demonstrated further by the interrelationships *between* the different domains of success identified in this study. For example, the establishment of new friendships, in the domain of social success, allowed the students the opportunity to study together, which contributed to academic success, as illustrated by the quantitative analysis. On the other hand, social-engagement experiences help students to develop generic skills and competencies that are important for university studies, resulting in personal gains, such as interpersonal skills. These interrelationships between different domains of success were corroborated by both the qualitative and quantitative findings, suggesting that success is intertwined with different aspects of student life. The complex nature of success may partly explain why there is no common consensus in the literature about the definitions of student success in higher education, as reviewed in Chapter 2. This study, however, has provided a foundation for defining first-year success in three domains and illustrates the complex and multi-faceted nature of the first-year student perspective of success.

Question 3: To what extent do different aspects of the university experience influence each domain of success in the first year of higher education?

Predictors of first-year success in this study were categorized into five levels to reflect different aspects of the university experience. The findings showed that each individual domain of success was influenced by multiple predictors including social, academic,

personal, institution-related factors and students' background characteristics. Thus, each predictor had its own role in contributing to student success. However, three particular predictors across all domains of success were found to be highly significant. These were 1) students' sense of belonging, i.e. under the institution dimension, 2) gains in personal development, i.e. under the personal dimension, and 3) success in academic transition, i.e. under the academic level dimension. Students' background information, although significant in some of the domains, had much less influence than other predictors of different aspects of the university experience. These findings highlight the complex interconnections among multiple aspects of university life in the first year of university, and suggest that success is dependent on different dimensions of student experience, rather than students' background characteristics. As these predictors are the responsibilities of multiple stakeholders within the institution, including faculty, university administrators and student affairs professionals, there is a clear need to engage all of these groups in collaboration to enhance student success.

6.2 Discussion of Findings

This section discusses the definitions of first-year success and the impact of predictors of different aspects of student life in the first year of university. In particular, the findings are compared with the existing literature to identify the major contributions of the present study.

6.2.1 Students' Perceptions of Success

By considering students' perceptions, this study has broadening the definition of first-year success to encompass the multiple, overlapping domains of social, academic and personal success. Each of these domains has a unique role in contributing to success, leading to whole person development that goes beyond the first year of university. For example, social success not only helps students' transitioning to university (e.g. Zammit, Vickers, Hibbert, & Power, 2017), but also provides a foundation for them to establish and develop their social experiences. The new social network of friends and mentors helps them to overcome the feeling of being alone, and gives them more encouragement to keep moving forward. These social experiences allow students to develop their social skills continuously, contribute to a sense of well-being and self-worth, and facilitate their success in the social dimension throughout their entire undergraduate studies.

Academic achievement, the most common measure of student success used in the literature, was also included as a success indicator by the participants in this study. However, academic success is dependent on students' priorities, as it is often associated with their goals and objectives. In particular, many institutions require them to obtain predefined credit points or GPAs in the first year in order to progress in their studies (Moss & Yeaton, 2015). Thus, definitions of the academic domain can be abstract and vary from student to student. Some of the students in this study had been admitted to broad disciplines and required to choose their majors in the second year of their study, which made it important for them to achieve high levels of grades. In other words, academic performance was attached to their goals and targets, and when they were able to achieve these goals, they would feel they had been successful in the academic domain. For other students who had already chosen their majors when they were admitted to the university, the academic achievement seemed to be less of a priority. Unless academic performance was attached to the students' goals and objectives, they perceived academic achievement, per se, to be less important than other domains of success.

Personal success relates to success in personal growth and development, and reflects personal gains resulting from different aspects of university experiences including the social and academic. This aspect of success is particularly important to students, as their personal development can affect their independence and ownership in life (e.g. Tanner & Arnett, 2016). It should be noted here that the university in which this study was conducted has a strong emphasis on personal development. As described in Chapter 1, the new undergraduate curriculum at this university focuses highly on students' all-round development and offers a number of compulsory first-year programmes (e.g. freshman seminar, service learning) develop students' skills and competencies in areas such as self-regulation, autonomous learning, leadership and intra-personal development. As a result, this might have influenced the students' perceptions of personal success and its importance in the definitions.

While the above section discussed the interrelated nature of indicators within each domain, first-year success is also interrelated and overlapping *between* domains. In particular, both the qualitative and quantitative findings revealed that first-year success is multi-dimensional, overlapping, interrelated, and intertwined with multiple aspects of students' university lives. A typical example illustrates how social success can be influenced by and related to other domains of success. The process of exploring social activities, which was defined as one of the indicators of social success, allows students to form new friendships.

This may provide them with opportunities to work and study together, i.e. facilitating peer interactions, which may contribute to academic success, as demonstrated by the regression analysis in the quantitative study. As well, the experience of social engagement can help students to develop skills and competencies that are important for their personal growth, e.g. communication skills, which are related to their perspective of personal success. This example illustrates the interconnections between success in the social, academic and personal domains of university life. Other studies (Keup & Stolzenberg, 2004; Larose et al., 2018; Strayhorn, 2012; Yorke & Longden, 2008) have also reported this multi-faceted nature of success.

Nevertheless, the interrelated nature of first-year success may be explained by the ambiguity of the classification of success in the literature. For example, York et al. (2015) examined the literature on the definitions of student success in higher education, and reviewed how academic success was used and operationalized in multiple academic disciplines. They pointed out that the definition of academic success is ambiguous in the existing literature, and found that the terms "academic success" and "student success" were used interchangeably. After the review, they came up with a comprehensive definition of academic success to include academic achievement, attainment of learning objectives, acquisition of desired skills and competencies, satisfaction, persistence, and post-college performance. Their definition of academic success overlapped with some components in the definitions of academic and personal dimensions proposed in this study. For instance, York classified the acquisition of desired skills and student satisfaction as academic success, while these two elements were categorized under personal success in the present study. Noticeably, York's definition of academic success is congruent with the result of the factor analysis performed on the success domains, as described in Chapter 5, indicating that the academic and personal domains can be combined into one single dimension to represent a wider spectrum of the success domain. The different categorizations of success in the literature reflect the complexity and overlapping nature of student success, signifying that the definition of first-year success is a holistic concept that interweaves with multiple dimensions of students' first-year experiences.

It is worth commenting that, although success can be highly interrelated, each domain can be a separate important entity of first-year student success on its own. For example, academic achievement, in itself, can be one final outcome. Some students in this study explained that good grades helped them to define their self-worth and that they would feel

disappointed if they did not receive good grades. In other cases, the students' goals and priorities explained why they defined academic achievement as an important success indicator (e.g. Jennings et al., 2013). Interestingly, the definition of good academic achievement seemed rather abstract in this study, as it could vary across individual students. The discussions in the focus groups emphasized the importance of individual students feeling satisfied with the grades they had received; in determining their sense of academic success, they appeared to care more about whether they made efforts to attain good grades than about the actual grades they received. In other words, it is possible for students to feel that they have achieved academic success even without top grades, as long as their intended goals include having made an effort. This example showed that individual students may conceptualize success differently as they will have their own priorities within and across the domains. Thus, success in each domain is relative and depends on the student's starting point and goals. Nevertheless, the students in this study conceptualised social, academic and personal success as three separate entities. Even though they are related, these domains demonstrated individual differences in the challenges the students experienced in these areas. From the practical point of view, these success domains have been separated into three concepts, as they are often the responsibilities of different stakeholders within the institution. Thus, this division can make it more efficient and effective for the institution to identify the support and provisions for students in facilitating first-year success in these areas.

6.2.2 Forces Driving First-Year Success

First-year success is influenced by multiple factors in different dimensions of student encounters during first-year university life. These are social, academic and personal development, institution-related factors and student demographic characteristics (to a much lesser extent). Each type of predictor seems to have different levels of influence on student success. For example, peer interaction, one of the constructs that has been emphasized frequently in the literature (e.g. Kuh et al., 2011; Strayhorn, 2018), was found to be highly significant in driving social and academic success in this study, while GPA was only significant in driving academic and personal success. The findings also highlighted the overlapping and interrelated nature of success as each predictor plays a role in contributing differentially to success, indicating that none of them should be neglected in the planning of first-year programmes.

Of all the predictors, institution-related factors seem to be amongst the most influential in driving all domains of first-year success. This includes students' sense of belonging to the institution, faculty and peers, and their perceived support for academic and personal-related matters from the institution. Students' sense of belonging reflects their sense of connectedness to their institution, faculty and peers (Strayhorn, 2012); it can be manifested by different encounters during the first-year experience. Thus, it is an outcome of student engagement in different aspects of first-year university life, through the experiences of interacting with faculty members, peers and social counterparts, and university administrative staff. Universities invest much effort in supporting first year students' transition by enhancing their involvement in activities like orientation, residence programmes, and campus organizations. By creating a supportive environment and a sense of belonging, students are more likely to build supportive networks of peers who can help them with future transitions. The importance of students' belonging has also been demonstrated repeatedly in the literature, having strong associations with positive outcomes such as student integration (both psychological and behavioural dimensions), academic motivation and performance, retention and persistence (Freeman et al., 2007; Hurtado et al., 2015; O'Keeffe, 2013; Soria, 2012). Knowing the importance of the institution in driving first-year success in the social, academic and personal domains, it is essential for higher education institutions to build supportive and belonging communities. In particular, institutions are required to develop holistic strategies to identify ways to promote students' belonging, and efforts should be made from all levels of stakeholders in cultivating the sense of belonging.

Perceived gain in personal development was found to be highly influential in all three domains of first-year success. This finding resonates with previous studies in addressing the importance of personal growth to students' perceptions of first-year success, especially when the first year is a stage during which substantial growth can be observed (Guiffrida, 2009; Keup & Stolzenberg, 2004; Reason et al., 2007). The findings from the qualitative study indicate that success accentuates personal growth but that the development of new skills and competencies, including generic skills that allow students to become autonomous, independent and responsible for their own selves, are lacking in many first-year students. The strong emphasis on these skills at PolyU may partly explain why the students in this study perceived the acquisition of these new skills as a crucial elements of first-year success. From the students' perspective, personal gain was one of the most important success factors, resulting from student engagement in a variety of daily encounters including academic, social

and personal dimensions. The gains in a range of personal skills and competencies at the first year is an integral part of the process of developing into an "all-round" person, although there are some competencies (e.g. independence and time management) that first-year students may perceive to be more important than others due to the common challenges experienced during the first year of university. This also explains why a number of competencies have often appreciated and discussed in the literature on the first-year experience (Cranwell et al., 2017; Ghazivakili et al., 2014; Van der Meer, et al., 2010). More importantly, the process of social and academic engagement provides opportunities for students to develop and exercise the skills and competencies during their first year, and the success in personal gains is an ongoing process for them to grow further, which contributes to their growth and development into adulthood.

Success in academic transition was another predictor that was influential in all domains of success, indicating that good adjustment to academic studies during the first year of university is something that students cannot avoid. Success in academic transition in this study referred to the adjustment to teaching and learning methods at university, coping with different types of assessment, and managing workload, the time for studies and other activities, and making decisions about their major studies. In fact, coping with academic demands is the basic requirement for students to progress to next level of study. Quite often, success in academic transition reflects other attainments (e.g. development of academic competencies) that students make in order to cope with the first-year challenges. In particular, the skills and competencies developed for academic transition are often associated with gains in personal development, leading to academic achievement, retention, persistence and student satisfaction (Clark et al., 2014; Nevill & Rhodes, 2004; Sidelinger et al., 2015; Tinto, 1987, 2010; Turner & Thompson, 2014). Noticeably, success in academic transition requires support for students in adapting and adjusting to their academic studies in the first year of university, which should always be the priority for institutional provision to all first-year students. These findings resonate with the underpinning theories to demonstrate the role of student involvement and engagement in leading success. While the two theories provided a connection between student engagement and learning, this study further identified a need for higher education institutions to provide inclusive opportunities for students to be involved and engaged actively in different dimensions of university experiences. The following section discusses further how the underpinning theories guided this research to contribute to the notion of student success, particularly from the perspective of an institutional administrator.

6.2.3 Catalyst for Student Success

The Input-Environment-Output (I-E-O) framework used in this study proposes that students come to university with a range of demographic, personal and academic characteristics, i.e. Input, which influence their behaviour in engaging with their higher institutions (Astin, 1991). This study, however, showed that the institution's environment to which students are exposed is by far more important in contributing to first-year success. The results revealed that student success is influenced highly by students' experiences of being able to transition to university studies, engaging with peers and their perceptions of personal development. At the same time, institutional provisions and the need for a "belonging" campus are vital for students to perceive themselves as having achieved success in first year. These environmental factors highlight the importance of the quality and quantity of engagement in different aspects of university life. Clearly, the multiple influences of student life in the first year of university can be determined by the institution's effort to provide opportunities for students to engage in social, academic and personal experiences. Thus, higher education institutions play a crucial role, more important than students' demographic and personal characteristics, in facilitating student success across multiple domains.

The important role of higher education institutions can be illustrated further by social, personal and academic success defined in this study. For example, social success, the incremental level of social engagement at university, from initial exploration of social life to serving as a committee member in university clubs and organizations, is an important aspect of first-year success. Students engaging in committee work in university organizations typically build onto the initial exploration of their social lives at university, are more likely to achieve the outcomes of social success (e.g. establishing new friendships) and success in other domains (e.g. development of skills and competencies). Similarly, academic success manifests as academic performance by mastering a range of skills and competencies to cope with academic challenges. These skills and competencies are facilitated in the process of teaching and learning, students' involvement in teaching and learning activities, and interactions between peers in academic-related endeavours. On the other hand, personal success is associated with personal development through student engagement in different dimensions of university life. The gains in skills and competencies (including both specific and generic) are important from the students' perspective of factors which allow them to

adapt to first-year university life. The findings from both phases showed that the success outcomes and predictors were related highly to students' active involvement and interactions with different dimensions of university life. It signifies the important role of the institution in creating a positive and engaging environment, to provide opportunities for students to be active in many aspects of first-year life. These findings are consistent with theories about persistence (e.g. Upcraft & Gardner, 1989; Tinto & Pusser, 2006), which have proposed that institutions must create environments conducive to student success, with opportunities for students to connect with other students, staff, faculty and the wider campus community, throughout their university lives.

6.3 Summary

This study has gone beyond the typical measures of academic performance and retention used to define first-year success, and has presented a new conceptualization of student success, capturing students' perspectives in order to develop a holistic definition of first-year success. This definition was found to incorporate the multiple domains of personal, social and academic success. Although these domains are overlapping and interrelated, students often conceptualise them separately, as indicated by the definitions they proposed in this study. Nevertheless, success in each domain is relative and depends on the individual student's starting point and goals. Thus, individual students may perceive success differently according to their own priorities.

First-year success is influenced, to a certain extent, by multiple aspects of predictors. These predictors capture different dimensions of student experiences in the first year, and each has its role in contributing to different domains of success. However, several predictors appear to be particular influential in driving all domains of success: sense of belonging, perceived gains in personal development and success in academic transition. These findings suggest a clear need for higher education institutions to attend to these significant predictors when supporting students to succeed in the first year of university.

Undoubtedly, student success is dependent on many factors, and it is often driven by what and how students are being involved and engaged with the institution, through an array of interactions with different dimensions within the institution. Thus, the "Environment" under Input-Environment-Output framework (Astin, 1991), plays the most significant role in

influencing first-year success; this can be enhanced further by a supportive, caring institution with a culture of "belonging", as evident in the present study. The findings of this study, thus, present a new way of thinking about first-year success from the student perspective, capturing the impact of each significant predictor that contributes to the important concept of success in the social, academic and personal domains.

Chapter 7 Conclusions and Implications

This chapter presents the significance of this study and considers the implications for policy and practice relating to how first-year success can be enhanced through an understanding of the holistic definition of success from the student perspective and the forces that drive this success. The limitations of the study are discussed and opportunities for future research are recommended. A reflection upon my entire research journey during this study is described before the final concluding remarks are presented.

7.1 Contributions of the Study

The purpose of this study was to explore students' perceptions of success in the first year of the higher education, and to identify key factors influencing this defined student success. The findings of this study are important as they present a new conceptualization of student success, and contribute a holistic definition of first-year success that incorporates multiple domains of personal, social and academic success. This moves beyond the typical institutional-focused concepts of success, such as retention and academic achievement that are often used in the literature. The sequential, institutional-level and large-scale nature of the study has broadened the definition of first-year success, enabling higher education institutions, including those in western countries where retention is low, to understand it from the student perspective and to acknowledge predictors from different aspects of students' first-year university experiences. These predictors portray multiple aspects of students' engagement and involvement in their social, academic and personal experiences of university, and capture the essence of what matters to many first-year students. Thus, this study contributes to the literature by using three clearly defined success domains, extending the scope of success beyond student retention, which is a common measure of first-year success, and the identification of a range of factors that leads to students' perceptions of desirable outcomes. Finally, the findings of this study provide a fuller picture of the complex relationships between the students' demographic background, university entrance information, engagement behaviour, perceptions, institution-related factors, and success variables.

7.2 Implications for Policy and Practice

The findings, the definition of students' first-year success and the forces that drive it, have implications for policies and practices in terms of the understanding of how first-year success can be enhanced at both institutional and international levels. It has significance to educational leadership at faculty, staff and student levels in identifying support to first-year students. First, institutions should consider the complex definitions of success from the student perspective when implementing programmes and policies to improve student outcomes. The first conclusion from this study, that first-year success is multi-faceted, complex and interrelated with social, academic and personal domains, provides a strong direction to policy makers and practitioners who focus on improving student outcomes or institution performance. Higher education institutions should continue to invest more time and effort in improving students' first year experiences to encourage them to attain different dimensions of success, rather than merely focusing on any one particular indicator that may reflect a perspective which may not be meaningful to first-year students. For example, social success is recognized as one important dimension to many first-year students, so institutions should embed the social success indicators in the programmes or extra-curriculum to improve students' sense of social connection in their first-year of university life.

Second, this study has demonstrated that first-year success is influenced by multiple factors that are highly related to different aspects of the first-year experience that are related to the institution's environment. In particular, a sense of belonging is one of the most influential factors contributing to all domains of first-year success. Sense of belonging, as measured in this study, entails students' connectedness with their professors, fellow students, and the institution. Such connectedness can certainly be facilitated by student engagement in multiple dimensions both inside and outside of the classroom. This finding provides important implications to both local and regional studies, showing the important role of higher education institutions in building good relationships with first-year students. Supported by recent literature on sense of belonging (Davis et al., 2019), institutions are strongly advised to provide supportive, caring and "belonging" communities to all first-year students. This can be done in collaborative efforts by faculty, student affairs professionals and other campus administrators, through academic, social and personal dimensions of student life in the first year of university.

Third, gains in personal development and success in academic transition were found to be the other substantial forces driving all domains of first-year success. These driving forces are related strongly to student growth, specifically the development of generic competencies and academic skills, which allow students to cope with their learning demands, to achieve their own goals and personal fulfilment. Students seem to associate their perceptions of first-year success with their future growth and progress in life, for which the acquisition of a variety of skills to overcome many obstacles in the first year can provide good preparation for life. Institutions should explore ways to promote student development through learning activities. As an educator, I share a belief similar to that of other researchers, such as Russell (2005) and Frost (1989), that these skills can be taught, or at least be manifested or further strengthened through the formal provision of activities in the curriculum. Of course, some may be more explicit and can be taught directly (e.g. information skills) while others tend to be more implicit (e.g. critical thinking). Given the number of studies showing that high impact practices in first-year programmes facilitate student development (e.g. Brownell & Swaner, 2009; Kuh, 2008; Wischusen et al., 2011), institutions should provide opportunities for students to manifest their development through academic and social experiences, and allow them to reflect on the goals and skills that they have learnt in the first year of university. For example, faculty members could consider different pedagogies (e.g. discussion in groups) and assignments (e.g. reflective writing) in the curriculum but, at the same time, ask students to consider what they have developed personally and how this development connects with their learning and their progress in life. These examples are often used to develop and enhance students' competencies, both in academic and generic skills in the first-year programmes.

Finally, this study provides evidence that different forms of student engagement predict student success in different domains. These engagements include all kinds of activities in academic (e.g. time spent on studying) and social (e.g. participation in social events) dimensions, both inside and outside the classroom. The results reported in this study pinpoint to the need, when policy decisions are being made, for greater awareness of forces that drive students' first-year success. In particular, success is influenced strongly by multiple factors, which require students to engage actively in different aspects of university life. These findings reinforce the necessity for universities to provide inclusive opportunities widely on the campus. For example, encouragement of social participation, engagement with university clubs and organizations to foster the social dimension; establishment of courses to develop

study skills and promotion of informal interaction with peers to cope with academic demands; and facilitation of workshops to develop generic skills that focus on student life in the first year. All of these efforts require a sense of shared responsibility among administrators, faculty, and student affairs professionals. Often, the resources and support provided by institutions to attend to students' academic, personal and social needs are fragmented (Kinzie & Kuh, 2004) and each unit is held responsible for only one aspect, e.g. personal development or academic achievement (American Association for Higher Education et al., 1998). Thus, it is necessary for institutional personnel to work together to develop a collaborative commitment so that student success at university can be enhanced.

7.3 Limitations of the Study

Three key limitations of the study can be identified. First, the influences imposed on first-year university students are numerous and complex in their interrelationships. Although this study has chosen the driving forces that were influential in the literature and context-specific (in that they can be applied to the local context), the conceptual framework adopted to guide the study may nevertheless have been underspecified. This is of course also one of the limitations of any quantitative design, as much is pre-specified in terms of what is to be done and how (Meadows, 2003). In other words, some important factors may be ignored or omitted, so that the study's resulting portrait of other important influences may be incomplete. Given the complexity of the definitions of first-year success and the interrelationship between success and its predictors, the current model provides an initial understanding of the relationships between different engagement factors and conditions underpinning first-year success.

Second, this study investigated the student experience in a UGC-funded university, a university that is highly competitive. Therefore, the findings of this study must be generalized cautiously. As there are other types of higher education institutions (i.e. private, government-subsidized) offering four-year undergraduate programmes, the findings from this study may not be representative of the all types of higher education institutions that offer four-year undergraduate programmes. Nevertheless, this study sampled one UGC-funded university, out of the eight in Hong Kong, the large numbers of student participants and high response rate suggest that the sample can be assumed to represent the general population of UGC-

funded universities in Hong Kong, which share similar curriculum structures and characteristics.

Finally, the study relied on students' self-reported data, and this can open to challenge its creditability, accuracy and reliability. However, Tourangeau et al. (2000) argued that self-report data can be generally valid if four conditions are met: 1) the questions are phrased unambiguously, 2) respondents are able to answer the questions, 3) response options are clear, and not leading to any embarrassing, socially desirable/ undesirable reactions, and 4) respondents think that the questions merit thoughtful responses and their responses are valued. The student self-report data in this study is believed to have met all of these four conditions through carefully planned procedures in the research design, as described in Chapter 5. Nevertheless, this study focused primarily on first-year success and it may not be clear how this contributes to longer-term outcomes, since this was not the focus of the study.

7.4 Implications for Future Research

This study was set up as an initial step in the creation of a model of first-year success in the context of higher education, beyond the typically used concepts of retention or persistence. To establish the impact of different aspects of the university experience effectively in portraying the development of student success, future research should be more longitudinal in nature. The data collected in this study represents a snapshot of first-time students during one particular academic year, capturing the initial stage of student development at the end of the first year of study. In other words, a longitudinal study that explores the importance of different types of first-year success in determining longer-term outcomes, experiences in subsequent years of university and the intensity of engagement in different areas would increase understanding of the forces driving student success across the entire higher education experience. In addition, the three concepts of success domains may be worth further investigation, as illustrated by the suggestion from this study's findings to combine the academic and personal dimensions.

Second, this study investigated a variety of factors that influence success and controlled a list of student background variables including age, gender, university entrance scores and first-year GPA. Future researchers should also consider how other aspects of university experiences, i.e. different predictors, can influence first-year success. For example,

students' intrinsic motivation has been studied in the literature about retention (e.g. Morrow & Ackermann, 2012). In addition, the inclusion of other possible socio-economic variables could be considered, such as family incomes or parents' education levels, as some of the literature has identified several of these characteristics as impacting on different dimensions of student success.

Given the importance in institution-related and personal-related factors, which were demonstrated consistently as influencing all three domains of success, future research should continue to search for the tools necessary to enhance students' sense of belonging to their institutions and faculties, increasing awareness of institutional support and exploring further how higher education institutions can provide opportunities for students to demonstrate gains in their personal development.

7.5 Final Thoughts and Reflections

This research interest was influenced strongly by my role as an educational developer and my experience working in the field of educational evaluation and assessment. One day I was engaged in a conversation with a group of stakeholders from this institution, including students, faculty staff, administrators, and student affairs professionals on the topic of how the first-year experience can be enhanced. I observed that each of us had different ways to define first-year success, some of which I did not agree with (e.g. student grades). None of us seemed to have a clear definition of student success and there was no mutual agreement among the different stakeholders. I then searched for internal documents, hoping to find information on how this institution perceives success in the first year of university and what measures are used to indicate student success. Unfortunately, there was no such explicit statement. I also searched for related international literature, and found that most studies focused on retention, persistence, or academic grades. I had reservations about how the knowledge from the international literature could be related to the Hong Kong context, where higher education institutions have almost 100% retention rates. I searched for studies in comparable Asian contexts, but none of them were relevant. These initial experiences formed my underlying interest in this thesis topic, particularly with regard to the practices and programmes that have been put into place in this studied institution.

This study has broadening the definition of first-year success to fully capture the student perspective of success in multiple domains, identified different aspects of the forces that drive first-year success, and provided a foundation to facilitate discussions about how to enhance the first-year experience in this university. The study results have been presented to the institutional-level learning and teaching committee and shared with other stakeholders in the institution to begin the exploration of different aspects of first-year success and how each identified driving force can be enhanced on campus. Although the present study initially analysed the findings at the institution level, it is also an attempt to generate more awareness and discussions at different stakeholder levels, including faculty staff, students and university administrators.

I keep asking myself how I have changed throughout the journey of this study, apart from having spent many hours on reading, re-reading, re-examining, re-analysing, refitting and refining concepts, ideas and theories into "a giant jigsaw puzzle" to address the central set of research questions. I realized that this is almost an inevitable process in "forcing" myself to be more reflective when I see new ideas and concepts. Reviewing the literature and exploring new research methods is a never-ending process; there are always new theories, new frameworks, new arguments and new tools of inquiry that demand I continually challenge my conceptions, my thinking, my assumptions and my knowledge. This journey is full of excitements, inspirations, but also challenges that could be depressing, and even disturbing. Particularly it happened when there is a conflict that lead to some kinds of cognitive dissonance, or when things go totally against my own belief or expectation, which make me feel that my entire cognitive system is being challenged. I was confused, lost, and wanted to give up. Now when I look back, I know it is the process of learning and the "ups and downs" feeling is almost inevitable. The way to move forward is be more open-minded and keep reflecting on how to fit my own conceptions into the ecosystem of knowledge in the hope that this thesis may lay a foundation for new ideas, new ways of thinking and actions that will benefit more students. Once if you have reached some kinds of agreement or identify new ways of thinking, the experience can be very empowering and rewarding.

7.6 Conclusion

This study aimed to explore the student perspective of success in the first year of higher education in Hong Kong. Its main objective was to explore the definitions of first-year success and identify the driving forces that lead to success in the higher education setting. The results of this study showed that first-year success is a holistic concept that encompasses the overlapping domains of social, academic and personal success. The multiple influences from different dimensions of student encounters during first-year university life demonstrate the significance of providing a caring and supportive environment for students to engage and be involved in the institution. This study highlights the complexity of first-year success from the student perspective, and the interconnections among the multiple influences and different aspects of the first-year university experience.

In addition, this study has provided an initial step in creating a model to portray the development of students' first-year success for the higher education sector of Hong Kong. There is a need for higher education institutions to create opportunities for students to develop their competencies, not only in the areas where it is necessary to do so for their university studies, but also for their social and personal well-being. It suggests the importance of incorporating first-year programmes into the curriculum to assist students to develop competencies and skills for coping with study demands. At the same time, student affairs professionals need to provide avenues and occasions for first-year students to interact with different counterparts. Faculties need to facilitate the engagement of study experiences and cultivate caring and belonging environments for students. Different support units are needed to ensure support is readily available for students when needed. Most importantly, these units should work together to help students transition to the initial university life, and to prepare themselves for the rest of their university studies.

Achieving success is never simple, and the nature of success is a complex interrelationship of multiple factors in all aspects of university life (Perna & Thomas, 2006). It is a journey, one that is full of challenges and barriers. But if the success is for the benefit of the students and society, there is a good reason to continue the efforts to enhance student success in higher education.

References

Adelman, C. (1999). *Answers in the Tool Box. Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment.* http://eric.ed.gov/?id=ED431363

Ainley, M. (2004). What do we know about student motivation and engagement. *Annual Meeting of the Australian Association for Research in Education, Melbourne*, *29*.

Akey, T. M. (2006). School Context, Student Attitudes and Behavior, and Academic Achievement: An Exploratory Analysis. *MDRC*. http://eric.ed.gov/?id=ED489760

Aliaga, M., & Gunderson, B. (1999). *Interactive statistics*. Prentice Hall.

American Association for Higher Education, American College Personnel Association, & National Association for Student Personnel Administrators. (1998). *Powerful Partnerships: A Shared Responsibility for Learning*. https://naspa.org/articles/powerful-partnerships-a-shared-responsibility-for-learning

American Federation of Teachers Higher Education. (2011). *Student success in higher education,* [American Federation of Teachers, Washington]. http://www.aft.org/sites/default/files/studentsuccess0311.pdf

Anaya, G., & Cole, D. G. (2001). Latina/o student achievement: Exploring the influence of student-faculty interactions on college grades. *Journal of College Student Development*, *42*(1), 3–14.

Anderson, G., Benjamin, D., & Fuss, M. A. (1994). The determinants of success in university introductory economics courses. *The Journal of Economic Education*, *25*(2), 99–119.

Antonio, A. L. (2001). The role of interracial interaction in the development of leadership skills and cultural knowledge and understanding. *Research in Higher Education*, *42*(5), 593–617.

Arnold, C. M. (2016). *Emotional Intelligence and the 21st Century College Student: Using Emotional Intelligence as a Stimulus for First Year Student Retention* [PhD Thesis]. University of Colorado Colorado Springs. Kraemer Family Library.

Asel, A. M., Seifert, T. A., & Pascarella, E. T. (2009). THE EFFECTS OF FRATERNITY/SORORITY MEMBERSHIP ON COLLEGE EXPERIENCES AND OUTCOMES: A PORTRAIT OF COMPLEXITY. *Oracle: The Research Journal of the Association of Fraternity/Sorority Advisors*, *4*(2).

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, *25*(4), 297–308.

Astin, A. W. (1991). *Assessment for excellence*. new york: Macmillan. http://cms.bsu.edu/-/media/WWW/DepartmentalContent/Effectiveness/pdfs/LendingLibrary/AssesmentExcellence.pdf

Astin, A. W. (1993). What matters in college: Four critical years revisited. *San Francisco*.

Astin, A. W. (1997). How "good" is your institution's retention rate? *Research in Higher Education*, *38*(6), 647–658.

Astin, A. W., & others. (1993). *What matters in college?: Four critical years revisited* (Vol. 1). Jossey-Bass San Francisco. https://www.researchgate.net/profile/Alexander_Astin/publication/242362064_What_Matters_in_College_Four_Critical_Years_Revisited/links/00b7d52d094be57582000000.pdf

Aulck, L., Velagapudi, N., Blumenstock, J., & West, J. (2016). Predicting student dropout in higher education. *ArXiv Preprint ArXiv:1606.06364*.

Australian Government Department of Education and Training. (2016). *2016 Appendix 4 – Attrition, success and retention | Department of Education and Training—Document*

library, *Australian Government*. https://docs.education.gov.au/documents/2016-appendix-4-attrition-success-and-retention

Axelson, R. D., & Flick, A. (2010). Defining student engagement. *Change: The Magazine of Higher Learning*, *43*(1), 38–43.

Badcock, P. B., Pattison, P. E., & Harris, K.-L. (2010). Developing generic skills through university study: A study of arts, science and engineering in Australia. *Higher Education*, *60*(4), 441–458.

Bagley, S. S., & Portnoi, L. M. (2014). Setting the stage: Global competition in higher education. *New Directions for Higher Education*, *2014*(168), 5–11.

Baik, C., Naylor, R., & Arkoudis, S. (2015). The First Year Experience in Australian Universities: Findings from Two Decades, 1994-2014. *Melbourne Centre for the Study of Higher Education*.

Barefoot, B. O. (2000). The first-year experience. *About Campus*, *4*(6), 12–18.

Barefoot*, B. O. (2004). Higher education's revolving door: Confronting the problem of student drop out in US colleges and universities. *Open Learning: The Journal of Open, Distance and e-Learning*, *19*(1), 9–18.

Beder, S. (1997). Addressing the issues of social and academic integration for first year students: A discussion paper. *Melbourne: Royal Melbourne Institute of Technology. Retrieved March*, *25*, 2011.

Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman Altamira. https://www.google.com/books?hl=en&lr=&id=WhKYqATAySwC&oi=fnd&pg=PR1&dq=Methods+in+Anthropology:+qualitative+and+quantitative+methods&ots=6zAkvyK0sD&sig=wkLRBdM0Yx1XTdI-drlKl3GxWFI

Bitzer, E. (2005). First-year students' perceptions of generic skills competence and academic performance: A case study at one university. *South African Journal of Higher Education*, *19*(3), 172–187.

Blackmore, P. (2015). *Prestige in academic life: Excellence and exclusion*. Routledge.

Blackmore, P., & Kandiko, C. B. (2011). Motivation in academic life: A prestige economy. *Research in Post-Compulsory Education*, *16*(4), 399–411. https://doi.org/10.1080/13596748.2011.626971

Blaikie, N. (2009). *Designing social research*. Polity.

Bowerman, B. L., & O'connell, R. T. (1990). *Linear statistical models: An applied approach*. Brooks/Cole.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). *Toward understanding and reducing college student departure. ASHE-ERIC Higher Education Research Report Series (No. 30).* San Francisco, CA: Jossey-Bass.

Braxton, John M. (2006). Faculty professional choices in teaching that foster student success. *National Postsecondary Education Cooperative*.

Braxton, John M. (2009). Understanding the development of the whole person. *Journal of College Student Development*, *50*(6), 573–575.

Braxton, John M., & Hirschy, A. S. (2004). Reconceptualizing antecedents of social integration in student departure. *Yorke, M. and Longden, B.(Eds.)*, 89–102.

Brewer, J., & Hunter, A. (1989). *Multimethod research: A synthesis of styles.* Sage Publications, Inc. http://psycnet.apa.org/psycinfo/1989-98711-000

Briggs, A. R., Clark, J., & Hall, I. (2012). Building bridges: Understanding student transition to university. *Quality in Higher Education*, *18*(1), 3–21.

Briggs, W. (2012, July 25). *Multivariate Statistics (Doctoral)—Hierarchical Regression Analyses*. http://www.claudiaflowers.net/rsch8140/hierarchical_regression_analyses.htm

Briguglio, C. (2000). Language and cultural issues for English-as-a-second/foreign language students in transnational educational settings. *Higher Education in Europe*, *25*(3), 425–434.

Bringle, R. G., Hatcher, J. A., & Muthiah, R. N. (2010). The role of service-learning on the retention of first-year students to second year. *Michigan Journal of Community Service Learning*, *16*(2), 38–49.

Brooks, S., Dobbins, K., Scott, J. J., Rawlinson, M., & Norman, R. I. (2014). Learning about learning outcomes: The student perspective. *Teaching in Higher Education*, *19*(6), 721–733.

Brown, R. (2015). The marketisation of higher education: Issues and ironies. *New Vistas*, *1*(1), 4–9.

Brownell, J. E., & Swaner, L. E. (2009). High-impact practices: Applying the learning outcomes literature to the development of successful campus programs. *Peer Review*, *11*(2), 26.

Bruinsma, M., & Jansen, E. P. (2009). When will I succeed in my first-year diploma? Survival analysis in Dutch higher education. *Higher Education Research & Development*, *28*(1), 99–114.

Bryman, A., Burgess, B., & others. (2002). *Analyzing qualitative data*. Routledge. https://www.google.com/books?hl=en&lr=&id=7mmKAgAAQBAJ&oi=fnd&pg=PP1&dq=Analyzing+qualitative+data.+London:+Routledge&ots=G9Gqjn1lfb&sig=rH-88ngSIxAncYPCVHlw1ZW86KE

Bryman, A., & Cramer, D. (1990). *Quantitative data analysis for social scientists.* Taylor & Frances/Routledge.

Bryson, C., & Hardy, C. (2010). *Reaching a common understanding of the meaning of student engagement*. http://irep.ntu.ac.uk/id/eprint/19752/

Bryson, Colin, & Hardy, C. (2011). Clarifying the concept of student of engagement: A fruitful approach to underpin policy and practice. *HEA Conference, Nottingham University*, 5–6. http://www.academia.edu/download/4470530/HEApaperConcepts.docx

Burke, L. (2016). *University attrition rates: Why are so many students dropping out?* https://www.news.com.au/finance/work/careers/university-attrition-rates-why-are-so-many-students-dropping-out/news-story/3e491dd119e1249a5a3763ef8010f8b5

Busher, H., & James, N. (2012). The ethical framework of research practice. *Research Methods in Educational Leadership & Management*, 90–104.

Cabrera, N. L. (2011). Using a sequential exploratory mixed-method design to examine racial hyperprivilege in higher education. *New Directions for Institutional Research*, *2011*(151), 77–91.

Census and Statistics Department, HKSAR. (2014). *Statistics on Students in Higher Education Institutions Funded through the University Grants Committee | Census and Statistics Department*. https://www.censtatd.gov.hk/hkstat/sub/sp370.jsp?productCode=FA100238

Chang, D.-F. (2015). Students in mass higher education: Effects of student engagement in Taiwan. In *Mass Higher Education Development in East Asia: Strategy, Quality, and Challenges* (pp. 189–208). Scopus. https://doi.org/10.1007/978-3-319-12673-9_12

Chang, M. J., Astin, A. W., & Kim, D. (2004). Cross-racial interaction among undergraduates: Some consequences, causes, and patterns. *Research in Higher Education*, *45*(5), 529–553.

Chang, M. J., Denson, N., Saenz, V., & Misa, K. (2006). The educational benefits of sustaining cross-racial interaction among undergraduates. *The Journal of Higher Education*, *77*(3), 430–455.

Chen, B.-B., Wiium, N., Dimitrova, R., & Chen, N. (2019). The Relationships between Family, School and Community Support and Boundaries and Student Engagement among Chinese Adolescents. *Current Psychology*, *38*(3), 705–714. Scopus. https://doi.org/10.1007/s12144-017-9646-0

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, *3*, 7.

Cholewa, B., & Ramaswami, S. (2015). The effects of counseling on the retention and academic performance of underprepared freshmen. *Journal of College Student Retention: Research, Theory & Practice*, *17*(2), 204–225.

Choy, S. (2002). Access and persistence: Findings from 10 years of longitudinal studies of students. *Washington, DC: American Council on Education*.

Christie, H., Tett, L., Cree, V. E., Hounsell, J., & McCune, V. (2008). 'A real rollercoaster of confidence and emotions': Learning to be a university student. *Studies in Higher Education*, *33*(5), 567–581.

Chu, Z. (2016). *The First Year Experience on an Urban Campus: A Case Study Exploring the Impact of First Year Programs on Student Perceptions of Belonging, Adjustment, Success, and Support*.

Clark, E. E., & Ramsay, W. (1990). Problems of retention in tertiary education. *Education Research and Perspectives*, *17*(2), 47–59.

Clark, M. H., Middleton, S. C., Nguyen, D., & Zwick, L. K. (2014). Mediating relationships between academic motivation, academic integration and academic performance. *Learning and Individual Differences*, *33*, 30–38.

Coate, K., Barnett, R., & Williams, G. (2001). Relationships between teaching and research in higher education in England. *Higher Education Quarterly*, *55*(2), 158–174.

Coates, H. (2006). *Student engagement in campus-based and online education: University connections*. Routledge.

Cohen, J., & Cohen, J. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed..). LErlbaum Associates.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research Methods in Education*. Routledge.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. London: Routledge. https://rosacorrales.com/wp-content/uploads/2017/03/Louis-Cohen_-Lawrence-Manion_-Keith-Morrison-Research-Methods-in-Education-6th-Edition-2007.pdf

Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology*, *26*(2), 148–164.

College Atlas. (2019). *U.S. College Dropout Rate | College Statistics*. https://www.collegeatlas.org/college-dropout.html

Comley, P. (2000). Pop-up surveys. What works, what doesn't work and what will work in the future. *Proceedings of the ESOMAR Worldwide Internet Conference Net Effects*, *3*.

Cooper, D. L., Healy, M. A., & Simpson, J. (1994). Student development through involvement: Specific changes over time. *Journal of College Student Development*.

Corella, A. K. (2010). *Identifying college student success: The role of first year success courses and peer mentoring*. https://repository.arizona.edu/handle/10150/195550

Cotten, S. R., & Wilson, B. (2006). Student–faculty interactions: Dynamics and determinants. *Higher Education*, *51*(4), 487–519.

Cox, P. L., Schmitt, E. D., Bobrowski, P. E., & Graham, G. (2005). Enhancing the first-year experience for business students: Student retention and academic success. *Journal of Behavioral and Applied Management*, *7*(1), 40–68.

Cranwell, P. B., Davis, F. J., Elliott, J. M., McKendrick, J. E., Page, E. M., & Spillman, M. J. (2017). Encouraging independent thought and learning in first year practical classes. *New Directions in the Teaching of Physical Sciences*, *12*(1). http://centaur.reading.ac.uk/71792/

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed..). Sage Publications.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications. https://www.google.com/books?hl=zh-TW&lr=&id=EbogAQAAQBAJ&oi=fnd&pg=PR1&dq=research+design:+qualitative,+quantitative+and+mixed+methods+approaches,+London:+Sage3.+Chapter+10:+Mixed+methods+procedures&ots=cagQsWQAC5&sig=hyFWa4Clyad71iQhOHFrSiaiS4I

Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. http://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2007.00097.x/full

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

Cuseo, J. (2014). Student success: Definition, outcomes, principles and practices. *The Big Picture: Esource for College Transitions*.

Cuseo, J. B. (2008). Assessment of the first-year experience: Six significant questions. *Proving and Improving: Strategies for Assessing the First College Year (Monograph No. 33)*, 27–34.

Cuseo, Joe. (2007). Student success: Definition, outcomes, principles and practices. *E-Source for College Transitions*, *4*(5).

Davidson, C., & Wilson, K. (2013). Reassessing Tinto's concepts of social and academic integration in student retention. *Journal of College Student Retention: Research, Theory & Practice*, *15*(3), 329–346.

Davis, G. M., Hanzsek-Brill, M. B., Petzold, M. C., & Robinson, D. H. (2019). Students' Sense of Belonging: The Development of a Predictive Retention Model. *Journal of the Scholarship of Teaching and Learning*, *19*(1).

Davis, J. A., & Farrell, M. A. (2016). *The market oriented university: Transforming higher education*. Edward Elgar Publishing.

Dawson, S., Manderson, L., & Tallo, V. L. (1993). *A manual for the use of focus groups.* http://www.popline.org/node/337323

De Wit, H. (2011). Globalisation and internationalisation of higher education. *Internationalisation of Universities in the Network Society*, *8*(2).

DeBerard, M. S., Spielmans, G. I., & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal*, *38*(1), 66.

Deem, R., Mok, K. H., & Lucas, L. (2007). Transforming higher education in whose image. *Exploring the Concept of the 'World Class' University in Europe and Asia. Retrieved September*.

Deen, A., & Leonard, L. (2015). Exploring potential challenges of first year student retention and success rates: A case of the school of tourism and hospitality, University of

Johannesburg, South Africa. *African Journal for Physical Health Education, Recreation and Dance, 21*(Supplement 2), 233–241.

Delaney, A. M. (2008). Why faculty–student interaction matters in the first year experience. *Tertiary Education and Management*, *14*(3), 227–241.

Denson, N., & Bowman, N. A. (2017). Do diversity courses make a difference? A critical examination of college diversity coursework and student outcomes. In *Higher education: Handbook of theory and research* (pp. 35–84). Springer.

DeShields, O. W., Kara, A., & Kaynak, E. (2005). Determinants of business student satisfaction and retention in higher education: Applying Herzberg's two-factor theory. *International Journal of Educational Management*, *19*(2), 128–139. https://doi.org/10.1108/09513540510582426

Dill, D. D., & Soo, M. (2005). Academic quality, league tables, and public policy: A cross-national analysis of university ranking systems. *Higher Education*, *49*(4), 495–533. https://doi.org/10.1007/s10734-004-1746-8

Drake, J. K. (2011). The role of academic advising in student retention and persistence. *About Campus*, *16*(3), 8–12.

Du Bois, J. W. (1991). Transcription design principles for spoken discourse research. *Pragmatics. Quarterly Publication of the International Pragmatics Association (IPrA)*, *1*(1), 71–106.

Duncan, C. R., & Noonan, B. (2007). Factors affecting teachers' grading and assessment practices. *Alberta Journal of Educational Research*, *53*(1), 1.

Eimers, M. T. (2001). The impact of student experiences on progress in college: An examination of minority and nonminority differences. *NASPA Journal*, *38*(3), 386–409.

Eisenberg, D., Hunt, J., & Speer, N. (2013). Mental health in American colleges and universities: Variation across student subgroups and across campuses. *The Journal of Nervous and Mental Disease*, *201*(1), 60–67.

Ellis, L., Burke, D. M., Lomire, P., & McCormack, D. R. (2003). Student Grades and Average Ratings of Instructional Quality: The Need for Adjustment. *The Journal of Educational Research*, *97*(1), 35–40. https://doi.org/10.1080/00220670309596626

Endo, J. J., & Harpel, R. L. (1982). The effect of student-faculty interaction on students' educational outcomes. *Research in Higher Education*, *16*(2), 115–138.

Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, *4*(1), 6–16.

Field, R. M., Duffy, J., & Huggins, A. (2014). *Independent learning skills, Self-determination theory and psychological well-being: Strategies for supporting the first year university experience.*

Filkins, J. W., & Doyle, S. K. (2002). *First Generation and Low Income Students: Using the NSSE Data To Study Effective Educational Practices and Students. Self-Reported Gains. AIR 2002 Forum Paper*.

Firestone, W. A. (1987). Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher*, *16*(7), 16–21.

Flynn, D. (2014). Baccalaureate attainment of college students at 4-year institutions as a function of student engagement behaviors: Social and academic student engagement behaviors matter. *Research in Higher Education*, *55*(5), 467–493.

Foubert, J. D., & Urbanski, L. A. (2006). Effects of involvement in clubs and organizations on the psychosocial development of first-year and senior college students. *NASPA Journal*, *43*(1), 166–182.

Foy, C., & Keane, A. (2018). Introduction of a peer mentoring scheme within biomedical sciences education–easing the transition to university life. *Journal of Further and Higher Education*, *42*(6), 733–741.

Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education*, *75*(3), 203–220.

Friedlander, L. J., Reid, G. J., Shupak, N., & Cribbie, R. (2007). Social support, self-esteem, and stress as predictors of adjustment to university among first-year undergraduates. *Journal of College Student Development*, *48*(3), 259–274.

Friedman, B. A., & Mandel, R. G. (2011). Motivation predictors of college student academic performance and retention. *Journal of College Student Retention: Research, Theory & Practice*, *13*(1), 1–15.

Frost, S. H. (1989). Academic responsibility: Can it be taught? *NACADA Journal*, *9*(2), 17–24.

Furlong, M. J., Whipple, A. D., Jean, G. S., Simental, J., Soliz, A., & Punthuna, S. (2003). Multiple contexts of school engagement: Moving toward a unifying framework for educational research and practice. *The California School Psychologist*, *8*(1), 99–113.

Gall, J. P., Gall, M. D., & Borg, W. R. (1999). *Applying educational research: A practical guide*. Longman Publishing Group.

Gardner, J. N., Barefoot, B. O., & Swing, R. L. (2001). *Guidelines for Evaluating... The First-Year Experience at Four-Year Colleges*. http://eric.ed.gov/?id=ED458850

Geall, V. (2000). The expectations and experience of first-year students at City University of Hong Kong. *Quality in Higher Education*, *6*(1), 77–89.

Gerber, D., & Du Plessis, L. (2012). Academic preparedness of students-an exploratory study. *TD: The Journal for Transdisciplinary Research in Southern Africa*, *8*(1), 81–94.

Ghazivakili, Z., Nia, R. N., PANAHI, F., Karimi, M., Gholsorkhi, H., & Ahmadi, Z. (2014). The role of critical thinking skills and learning styles of university students in their academic performance. *Journal of Advances in Medical Education & Professionalism*, *2*(3), 95.

Gifford, D. D., Briceno-Perriott, J., & Mianzo, F. (2006). Locus of Control: Academic Achievement and Retention in a Sample of University First-Year Students. *Journal of College Admission*, *191*, 18–25.

Goldfinch, J., & Hughes, M. (2007). Skills, learning styles and success of first-year undergraduates. *Active Learning in Higher Education*, *8*(3), 259–273.

Goldstein, H. (2011). *Multilevel Statistical Models*. John Wiley & Sons.

Gonyea, R. M. (2005). Self-reported data in institutional research: Review and recommendations. *New Directions for Institutional Research*, *127*, 73.

Goodman, K. (2006). First-year seminars increase persistence and retention. *First-Year Programs*.

Green, J. L., Camilli, G., & Elmore, P. B. (2012). *Handbook of complementary methods in education research*. Routledge.

Green, M., & Baer, M. (2000). What does globalisation mean for teaching and learning. *CHET Transformation Debates. Centre for Higher Education Transformation. Wynberg, South Africa*.

Greenbaum, T. L. (1999). *Moderating focus groups: A practical guide for group facilitation*. Sage Publications. https://www.google.com/books?hl=en&lr=&id=o2HWCQAAQBAJ&oi=fnd&pg=PT

7&dq=moderating+focus+groups,+a+practical+guide+for+group+facilitation&ots=3gQaEN5sdX&sig=us_i0zoSFS3P5AcYRIR8RUWYW0I

Grix, J. (2010). *The foundations of research*. Macmillan International Higher Education.

Guba, E. G., & Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies. *Qualitative Approaches to Evaluation in Education*, 89–115.

Guiffrida, D. A. (2009). Theories of Human Development that Enhance an Understanding of the College Transition Process. *Teachers College Record*, *111*(10), 2419–2443.

Gurin, P., Dey, E., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, *72*(3), 330–367.

Haber-Curran, P., & Stewart, T. (2015). Leadership Skill Development in a First-Year Honors Service-Learning Seminar. *Journal of Community Engagement & Higher Education*, *7*(2).

Harper, S. R., & Quaye, S. J. (2009). Beyond sameness, with engagement and outcomes for all. *Student Engagement in Higher Education*, 1–15.

Harris, B. W. (1998). Looking inward: Building a culture for student success. *Community College Journal of Research and Practice*, *22*(4), 401–418.

Harrison, N. (2006). The impact of negative experiences, dissatisfaction and attachment on first year undergraduate withdrawal. *Journal of Further and Higher Education*, *30*(4), 377–391.

Harvey, L., Drew, S., & Smith, M. (2006). *The first-year experience: A review of literature for the higher education academy*. Centre for research and evaluation, Sheffield Hallam University. https://www.heacademy.ac.uk/sites/default/files/first_year_experience_full_report.pdf

Hausmann, L. R., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, *48*(7), 803–839.

Hayman, R., Allin, L., & Coyles, A. (2017). Exploring Social Integration of Sport Students during the Transition to University. *Journal of Perspectives in Applied Academic Practice*, *5*(2). https://jpaap.napier.ac.uk/index.php/JPAAP/article/view/284

Hazelkorn, E. (2009). Rankings and the battle for world-class excellence: Institutional strategies and policy choices. *Higher Education Management and Policy*, *21*(1), 1–22.

Held, D., McGrew, A., Goldblatt, D., & Perraton, J. (2000). Global Transformations: Politics, Economics and Culture. In C. Pierson & S. Tormey (Eds.), *Politics at the Edge: The PSA Yearbook 1999* (pp. 14–28). Palgrave Macmillan UK. https://doi.org/10.1057/9780333981689_2

Henard, F., & Leprince-Ringuet, S. (2008). The path to quality teaching in higher education. *París: OCDE. Recuperado de Https://Www1. Oecd. Org/Edu/Imhe/44150246. Pdf*.

Heng, K. (2014). The effects of faculty behaviors on the academic achievement of first-year Cambodian urban university students. *Educational Research for Policy and Practice*, *13*(3), 233–250.

Hernandez, K., Hogan, S., Hathaway, C., & Lovell, C. D. (1999). Analysis of the literature on the impact of student involvement on student development and learning: More questions than answers? *NASPA Journal*, *36*(3), 184–197.

Hess, A. (2017). *Bill Gates: US college dropout rates are 'tragic'*. CNBC. https://www.cnbc.com/2017/10/10/bill-gates-us-college-dropout-rates-are-tragic.html

Hillman, K. (2005). The first year experience: The transition from secondary school to university and TAFE in Australia. *LSAY Research Reports*, 44.

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention: Research, Theory & Practice, 4*(3), 227–256.

Hornsby, D. J., & Osman, R. (2014). Massification in higher education: Large classes and student learning. *Higher Education*, *67*(6), 711–719.

Hoskin, R. (2012, March 3). *The dangers of self-report*. Science Brainwaves. http://www.sciencebrainwaves.com/the-dangers-of-self-report/

Howe, K. R. (1985). Two dogmas of educational research. *Educational Researcher*, *14*(8), 10–18.

Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher*, *17*(8), 10–16.

Hu, S., & Kuh, G. D. (2002). Being (dis) engaged in educationally purposeful activities: The influences of student and institutional characteristics. *Research in Higher Education*, *43*(5), 555–575.

Hu, S., & Kuh, G. D. (2003). Maximizing what students get out of college: Testing a learning productivity model. *Journal of College Student Development*, *44*(2), 185–203.

Hui, T., Yuen, M., & Chen, G. (2018). Career-Related Filial Piety and Career Adaptability in Hong Kong University Students. *Career Development Quarterly*, *66*(4), 358–370. Scopus. https://doi.org/10.1002/cdq.12156

Hunter, M. S. (2006). Fostering student learning and success through first-year programs. *Peer Review*, *8*(3), 4.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 324–345.

Hurtado, S., Carter, D. F., & Spuler, A. (1996). Latino student transition to college: Assessing difficulties and factors in successful college adjustment. *Research in Higher Education*, *37*(2), 135–157.

Hurtado, S., Han, J. C., Sáenz, V. B., Espinosa, L. L., Cabrera, N. L., & Cerna, O. S. (2007). Predicting transition and adjustment to college: Biomedical and behavioral science aspirants' and minority students' first year of college. *Research in Higher Education*, *48*(7), 841–887.

Hurtado, S., Ruiz Alvarado, A., & Guillermo-Wann, C. (2015). *Creating inclusive environments: The mediating effect of faculty and staff validation on the relationship of discrimination/bias to students' sense of belonging. Journal Committed to Social Change on Race and Ethnicity, 1 (1), 60-80.*

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online surveys in marketing research. *International Journal of Market Research*, *44*(3), 1–14.

Jama, M. P. (2018). Maximising the first-year experience through the incorporation of generic skills in a medical curriculum at the University of the Free State. *Journal of Student Affairs in Africa*, *6*(1), 77–91.

Jamelske, E. (2009). Measuring the impact of a university first-year experience program on student GPA and retention. *Higher Education*, *57*(3), 373–391.

Jansen, E. P., & Van der Meer, J. (2012). Ready for university? A cross-national study of students' perceived preparedness for university. *The Australian Educational Researcher*, *39*(1), 1–16.

Jayakumar, U. (2008). Can Higher Education Meet the Needs of an Increasingly Diverse and Global Society? Campus Diversity and Cross-Cultural Workforce Competencies. *Harvard Educational Review*, *78*(4), 615–651. https://doi.org/10.17763/haer.78.4.b60031p350276699

Jennings, N., Lovett, S., Cuba, L., Swingle, J., & Lindkvist, H. (2013). *"What Would Make This a Successful Year for You?" How Students Define Success in College*. http://repository.wellesley.edu/cgi/viewcontent.cgi?article=1003&context=scholarship

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist*, *8*(1), 7–27.

Jinghuan, S., Wen, W., Yifei, L., & Jing, C. (2014). China College Student Survey (ccss): Breaking Open the Black Box of the Process of Learning. *International Journal of Chinese Education*, *3*(1), 132–159. https://doi.org/10.1163/22125868-12340033

Jiram, W. A., Bujang, A. A., Zarin, H. A., & Latib, A. A. (2016). Assessing the Adequacy of Assimilation of Real Estate Graduate's Generic Competency. *International Journal of Information and Education Technology*, *6*(5), 338.

Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage.

Johnson, D. (2007). *Sense of belonging among women of color in science, technology, engineering, and math majors: Investigating the contributions of campus racial climate perceptions and other college environments* [PhD Thesis].

Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development*, *48*(5), 525–542.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26.

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education*, *38*(5), 758–773.

Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika*, *23*(3), 187–200.

Kantanis, T. (2000). The role of social transition in students': Adjustment to the first-year of university. *Journal of Institutional Research*, *9*(1), 100–110.

Kelly, J. T., Kendrick, M. M., Newgent, R. A., & Lucas, C. J. (2007). Strategies for student transition to college: A proactive approach.(Report). *College Student Journal*, *41*(4), 1021–1035.

Kember, D. (2010). Opening up the road to nowhere: Problems with the path to mass higher education in Hong Kong. *Higher Education*, *59*(2), 167–179.

Keup, J., & Barefoot, B. (2005). Learning how to be a successful student: Exploring the impact of first-year seminars on student outcomes. *Journal of The First-Year Experience & Students in Transition*, *17*(1), 11–47.

Keup, J. R., & Stolzenberg, E. B. (2004). *The 2003 your first college year (YFCY) survey: Exploring the academic and personal experiences of first-year students*. National Resource Center for the.

Kinzie, J., & Kuh, G. D. (2004). Going deep: Learning from campuses that share responsibility for student success. *About Campus*, *9*(5), 2–8. https://doi.org/10.1002/abc.105

Kitzinger, J. (2005). Focus groups in research: Using group dynamics. *Qualitative Research in Health Care*, *56*. https://www.google.com/books?hl=en&lr=&id=qXAwqGCl9rMC&oi=fnd&pg=PA56&dq=Focus+group+research:+Using+group+dynamics+to+explore+perceptions,+ex

periences+and+understandings&ots=8dm1j4pVdx&sig=wmqXo4P9aq4s83gBkEfky_fvssQ

Knight, P. T., & Yorke, M. (2003). Employability and Good Learning in Higher Education. *Teaching in Higher Education*, *8*(1), 3–16. https://doi.org/10.1080/1356251032000052294

Kokkelenberg, E. C., Dillon, M., & Christy, S. M. (2008). The effects of class size on student grades at a public university. *Economics of Education Review*, *27*(2), 221–233. https://doi.org/10.1016/j.econedurev.2006.09.011

Komarraju, M., Musulkin, S., & Bhattacharya, G. (2010). Role of student–faculty interactions in developing college students' academic self-concept, motivation, and achievement. *Journal of College Student Development*, *51*(3), 332–342.

Krause, K. (2005). Understanding and promoting student engagement in university learning communities. *Paper Presented as Keynote Address: Engaged, Inert or Otherwise Occupied*, 21–22.

Krause, K.-L. (2001). The university essay writing experience: A pathway for academic integration during transition. *Higher Education Research & Development*, *20*(2), 147–168.

Krause, K.-L., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education*, *33*(5), 493–505.

Krause, K.-L., Hartley, R., James, R., & McInnis, C. (2005). The first year experience in Australian universities: Findings from a decade of national studies. *Document Number*. http://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0008/1670228/FYEReport05KLK.pdf

Kretovics, M., & Michael, S. O. (2005). *Financing higher education in a global market*. Algora Publishing.

Krippendorff, K. (2004). *Content Analysis: An Introduction to Its Methodology*. Sage.

Krueger, R. A., & Casey, M. A. (2009). Focus groups: A practical guide for applied research 4 edition Sage Publications. *Inc, Thousand Oaks, California*.

Krueger, Richard A. (1997). *Moderating focus groups* (Vol. 4). Sage publications. https://www.google.com/books?hl=en&lr=&id=0VPpCQAAQBAJ&oi=fnd&pg=PR13&dq=moderating+focus+groups+krueger&ots=mk00mCDjeo&sig=C4W-YsMdRV__7r2whmQxQuM4FOg

Krueger, Richard A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications. https://www.google.com/books?hl=en&lr=&id=APtDBAAAQBAJ&oi=fnd&pg=PT7&dq=Developing+questions+for+focus+groups&ots=5nY5geqKzf&sig=p2kAcEiQTDCPo4i6eRXJYSJiZ-Y

Krumrei-Mancuso, E. J., Newton, F. B., Kim, E., & Wilcox, D. (2013). Psychosocial factors predicting first-year college student success. *Journal of College Student Development*, *54*(3), 247–266.

Kuh, G. D. (1993). In their own words: What students learn outside the classroom. *American Educational Research Journal*, *30*(2), 277–304.

Kuh, G. D. (1995). The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, *66*(2), 123–155.

Kuh, G. D. (2001). *The national survey of student engagement: Conceptual framework and overview of psychometric properties, Indiana University Center for Postsecondary Research & Planning, Retrieved May 20, 2007*.

Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning*, *35*(2), 24–32.

Kuh, G. D. (2005). Student engagement in the first year of college. *Challenging and Supporting the First-Year Student: A Handbook for Improving the First Year of College*, 86–107.

Kuh, G. D. (2008). Excerpt from high-impact educational practices: What they are, who has access to them, and why they matter. *Association of American Colleges and Universities*.

Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, *2009*(141), 5–20.

Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, *79*(5), 540–563.

Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education*, *24*(3), 309–332.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). What matters to student success: A review of the literature. *Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success*. https://www.ue.ucsc.edu/sites/default/files/WhatMattersStudentSuccess(Kuh,July2006).pdf

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2011). *Piecing together the student success puzzle: Research, propositions, and recommendations: ASHE Higher Education Report* (Vol. 116). John Wiley & Sons.

Kumar, R. (2014). *Research Methodology: A Step-by-Step Guide for Beginners*. London : SAGE Publications. https://trove.nla.gov.au/work/7442973

Laird, T. F. N., Shoup, R., & Kuh, G. D. (2005). Deep learning and college outcomes: Do fields of study differ. *Annual Meeting of the Association for Institutional Research, San Diego, CA*.

Lamborn, S., Newmann, F., & Wehlage, G. (1992). The significance and sources of student engagement. *Student Engagement and Achievement in American Secondary Schools*, 11–39.

Lamport, M. A. (1993). Student-faculty interaction and the effect on college student outcomes: A review of the literature. *Adolescence*, *28*(112), 971.

Lanford, M. (2016). Perceptions of higher education reform in Hong Kong: A glocalisation perspective. *International Journal of Comparative Education and Development*, *18*(3), 184–204.

Larose, S., Duchesne, S., Litalien, D., Denault, A.-S., & Boivin, M. (2018). Adjustment Trajectories During the College Transition: Types, Personal and Family Antecedents, and Academic Outcomes. *Research in Higher Education*, 1–27.

Leamnson, R. N. (1999). *Thinking about teaching and learning: Developing habits of learning with first year college and university students*. Stylus Publishing, LLC.

Lee, C. K. C., & Morrish, S. C. (2012). Cultural values and higher education choices: Chinese families. *Australasian Marketing Journal (AMJ)*, *20*(1), 59–64. https://doi.org/10.1016/j.ausmj.2011.10.015

Leese, M. (2010). Bridging the gap: Supporting student transitions into higher education. *Journal of Further and Higher Education*, *34*(2), 239–251.

Legislative Council Secretariat. (2012). *Information Note: Development of Self-financing Post-secondary Sector* [The Legislative Council]. https://www.legco.gov.hk/yr11-12/english/sec/library/1112in21-e.pdf

Lewis, M. (2000). Focus group interviews in qualitative research: A review of the literature. *Action Research E-Reports*, *2*.

Libbey, H. P. (2004). Measuring student relationships to school: Attachment, bonding, connectedness, and engagement. *Journal of School Health*, *74*(7), 274–283.

Lin, F.-L., Wang, T.-Y., & Yang, K.-L. (2018). Description and evaluation of a large-scale project to facilitate student engagement in learning mathematics. *Studies in Educational Evaluation*, *58*, 178–186. Scopus. https://doi.org/10.1016/j.stueduc.2018.03.001

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.

Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. *The Sage Handbook of Qualitative Research*, *4*, 97–128.

Little, B., Lock, W., Scesa, A., & Williams, R. (2009). Report to HEFCE on student engagement, Centre for Higher Education Research and Information. *Centre for Higher Education Research and Information. Retrieved March*, *1*, 2011.

Liu, R., & Chiang, Y.-L. (2019). Who is more motivated to learn? The roles of family background and teacher-student interaction in motivating student learning. *The Journal of Chinese Sociology*, *6*(1), 1–17. https://doi.org/10.1186/s40711-019-0095-z

Lizzio, A., & Wilson, K. (2004). First-year students' perceptions of capability. *Studies in Higher Education*, *29*(1), 109–128.

Ljungdah, L. (2014). Should i stay or should i go: Student retention and success. *ResearchGate*, *20*(3), 11–23.

Lobo, A. (2012). Will We Meet Again?: Examining the Reasons Why Students are Leaving First Year University Courses and Moving Towards an Approach to Stop Them. *International Journal of Learning*, *18*(7).

Locke, W., Verbik, L., Richardson, J. T., & King, R. (2008). *Counting what is measured or measuring what counts? League tables and their impact on higher education institutions in England*.

Lowe, H., & Cook, A. (2003). Mind the Gap: Are students prepared for higher education? *Journal of Further and Higher Education*, *27*(1), 53–76.

Luca, J., & Heal, D. (2007). Producing graduates with essential generic skills: A model for teaching and learning. *EdMedia+ Innovate Learning*, 2883–2891.

Lucas, L. (2014). Academic resistance to quality assurance processes in higher education in the UK. *Policy and Society*, *33*(3), 215–224.

Lundberg, C. A. (2012). Predictors of learning for students from five different racial/ethnic groups. *Journal of College Student Development*, *53*(5), 636–655.

Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. *Journal of College Student Development*, *45*(5), 549–565.

Mann, S. J. (2001). Alternative perspectives on the student experience: Alienation and engagement. *Studies in Higher Education*, *26*(1), 7–19.

Marginson, S. (2006). Dynamics of national and global competition in higher education. *Higher Education*, *52*(1), 1–39.

Marginson, S. (2011). Higher education in East Asia and Singapore: Rise of the Confucian Model. *Higher Education*, *61*(5), 587–611. https://doi.org/10.1007/s10734-010-9384-9

Marginson, S., & Wende, M. van der. (2007). *Globalisation and Higher Education* [Working Paper]. OECD. http://repositorio.minedu.gob.pe/handle/123456789/2548

Marioulas, J. (2017). China: A World Leader in Graduation Rates. *International Higher Education*, *0*(90), 28–29. https://doi.org/10.6017/ihe.2017.90.10009

Marthers, P., Herrup, P., & Steele, J. (2015). Consider the costs of student attrition. *Enrollment Management Report*, *19*(6), 1–5.

Mayhew, M. J., & Engberg, M. E. (2011). Promoting the development of civic responsibility: Infusing service-learning practices in first-year" success" courses. *Journal of College Student Development*, *52*(1), 20–38.

McCormick, A. C., Kinzie, J., & Gonyea, R. M. (2013). Student engagement: Bridging research and practice to improve the quality of undergraduate education. In *Higher education: Handbook of theory and research* (pp. 47–92). Springer. http://link.springer.com/chapter/10.1007/978-94-007-5836-0_2

McCroskey, J. C., & Richmond, V. P. (1983). Power in the classroom I: Teacher and student perceptions. *Communication Education*, *32*(2), 175–184.

McGrath, M., & Braunstein, A. (1997). The prediction of freshmen attrition: An examination of the importance of certain demographic, academic, financial and social factors. *College Student Journal*.

McInnis, C. (2001). *Signs of Disengagement? The Changing Undergraduate Experience in Australian Universities. Inaugural Professorial Lecture.* http://eric.ed.gov/?id=ED466720

McInnis, C., James, R., & McNaught, C. (1995). First year on campus. *Canberra: AGPS*. https://www.cshe.unimelb.edu.au/people/james_docs/FYE.pdf

McKenzie*, K., Gow, K., & Schweitzer, R. (2004). Exploring first-year academic achievement through structural equation modelling. *Higher Education Research & Development*, *23*(1), 95–112.

McLachlan, C., & others. (2005). Focus group methodology and its usefulness in early childhood research. *New Zealand Research in Early Childhood Education*, *8*, 113.

Meadows, K. A. (2003). So you want to do research? 4: An introduction to quantitative methods. *British Journal of Community Nursing*, *8*(11), 519–526.

Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage publications.

Meyer, M., Bushney, M., & Ukpere, W. I. (2011). The impact of globalisation on higher education: Achieving a balance between local and global needs and realities. *African Journal of Business Management*, *5*(15), 6569–6578.

Miller, B. (2010). The price of higher education: How rational is British tuition fee policy? *Journal of Higher Education Policy and Management*, *32*(1), 85–95.

Mills, C., Heyworth, J., Rosenwax, L., Carr, S., & Rosenberg, M. (2009). Factors associated with the academic success of first year Health Science students. *Advances in Health Sciences Education*, *14*(2), 205–217.

Montacute, R., & Cullinane, C. (2018, December). *Access to Advantage -The influence of schools and place on admissions to top universities*. https://www.suttontrust.com/wp-content/uploads/2018/12/AccesstoAdvantage-2018.pdf

Moon, R. J. (2016). Internationalisation without cultural diversity? Higher education in Korea. *Comparative Education*, *52*(1), 91–108.

Morgan, D. L. (1992). Designing focus group research. *Tools for Primary Care Research*, *2*, 177–93.

Morgan, D. L. (1996). *Focus Groups as Qualitative Research*. SAGE Publications.

Morgan, D. L. (1997). *The focus group guidebook* (Vol. 1). Sage publications. https://www.google.com/books?hl=en&lr=&id=nrLdCQAAQBAJ&oi=fnd&pg=PR9&dq=The+focus+group+guide+book,&ots=uth7JvJcF0&sig=cehwKcCV69DJszTeDmHOFfAWb1g

Morgan, D. L., & Krueger, R. A. (1993). *When to use focus groups and why*. http://psycnet.apa.org/psycinfo/1993-98007-001

Morgan, D. L., & Scannell, A. U. (1998). *Planning focus groups* (Vol. 2). Sage. https://www.google.com/books?hl=en&lr=&id=vx85DQAAQBAJ&oi=fnd&pg=PP1&dq=Palnning+focus+gruops,+david+L+morgan&ots=EcsSGs4Jrt&sig=tipLxk6HFjtDoz7ysInZmU6G5sw

Morrow, J., & Ackermann, M. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. *College Student Journal*, *46*(3), 483–491.

Moss, B. G., & Yeaton, W. H. (2015). Failed warnings: Evaluating the impact of academic probation warning letters on student achievement. *Evaluation Review*, *39*(5), 501–524.

Mudhovozi, P. (2012). Social and academic adjustment of first-year university students. *Journal of Social Sciences*, *33*(2), 251–259.

Murdoch-Eaton, D., & Whittle, S. (2012). Generic skills in medical education: Developing the tools for successful lifelong learning. *Medical Education*, *46*(1), 120–128.

Nardi, P. M. (2018). *Doing survey research: A guide to quantitative methods*. Routledge.

National Survey of Student Engagement. (2000). *The NSSE 2000 report: National benchmarks of effective educational practice*.

Nevill, A., & Rhodes, C. (2004). Academic and social integration in higher education: A survey of satisfaction and dissatisfaction within a first-year education studies cohort at a new university. *Journal of Further and Higher Education*, *28*(2), 179–193.

Noble, K., Flynn, N. T., Lee, J. D., & Hilton, D. (2007). Predicting successful college experiences: Evidence from a first year retention program. *Journal of College Student Retention: Research, Theory & Practice*, *9*(1), 39–60.

Oguntunde, P. E., Okagbue, H. I., Oguntunde, O. A., Opanuga, A. A., & Oluwatunde, S. J. (2018). Analysis of the inter-relationship between students' first year results and their final graduating grades. *International Journal of Advanced and Applied Sciences*, *5*(10), 1–6.

O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal*, *47*(4), 605–613.

Olani, A. (2009). *Predicting first year university students academic success*.

Organisation for Economic Co-operation and Development. (2012). *Education at a glance 2012: Highlights. Paris: OECD Publishing.* https://www.google.com.hk/search?q=OECD%2C+education+at+a+glance+2012&ie=utf-8&oe=utf-8&client=firefox-b-ab&gfe_rd=cr&ei=-fpsV-2nBojE9AWtz7G4Dw

Pace, C. R. (1963). Differences in campus atmosphere. *Readings in the Social Psychology of Education*, 73–79.

Pace, C. R. (1984). *Measuring the Quality of College Student Experiences. An Account of the Development and Use of the College Student Experiences Questionnaire.*

Pace, C. R. (1998). Recollections and reflections. *Higher Education: Handbook of Theory and Research*, 1–34.

Padilla, R. V. (2009). *Student success modeling: Elementary school to college*. Stylus Publishing, LLC.

Parker, J. D., Summerfeldt, L. J., Hogan, M. J., & Majeski, S. A. (2004). Emotional intelligence and academic success: Examining the transition from high school to university. *Personality and Individual Differences*, *36*(1), 163–172.

Parker, J., Duffy, J., Wood, L., Bond, B., & Hogan, M. (2005). Academic achievement and emotional intelligence: Predicting the successful transition from high school to university. *Journal of the First-Year Experience & Students in Transition*, *17*(1), 67–78.

Pascarella, E. T. (1995). *What Have We Learned from the First Year of the National Study of Student Learning?*.

Pascarella, E. T., & Chapman, D. W. (1983). A multiinstitutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal*, *20*(1), 87–102.

Pascarella, E. T., Seifert, T. A., & Blaich, C. (2010). How effective are the NSSE benchmarks in predicting important educational outcomes? *Change: The Magazine of Higher Learning*, *42*(1), 16–22.

Pascarella, E. T., Smart, J. C., & Ethington, C. A. (1986). Long-term persistence of two-year college students. *Research in Higher Education*, *24*(1), 47–71. https://doi.org/10.1007/BF00973742

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research (Vol. 2)*. San Francisco: Jossey-Bass.

Patterson, A., & Bell, J. W. (2001). Teaching and Learning Generic Skills in Universities: The case of'sociology'in a teacher education programme. *Teaching in Higher Education*, *6*(4), 451–471.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* . SAGE Publications, inc. http://psycnet.apa.org/psycinfo/1990-97369-000

Peek, L., & Fothergill, A. (2009). Using focus groups: Lessons from studying daycare centers, 9/11, and Hurricane Katrina. *Qualitative Research, 9*(1), 31–59.

Peltier, G. L., Laden, R., & Matranga, M. (2000). Student persistence in college: A review of research. *Journal of College Student Retention: Research, Theory & Practice*, *1*(4), 357–375.

Pennington, C. R., Bates, E. A., Kaye, L. K., & Bolam, L. T. (2018). Transitioning in higher education: An exploration of psychological and contextual factors affecting student satisfaction. *Journal of Further and Higher Education*, *42*(5), 596–607.

Perna, L. W., & Thomas, S. L. (2006). *A framework for reducing the college success gap and promoting success for all*.

Pessoa, S., Miller, R. T., & Kaufer, D. (2014). Students' challenges and development in the transition to academic writing at an English-medium university in Qatar. *International Review of Applied Linguistics in Language Teaching*, *52*(2), 127–156.

Pike, G. R., & Kuh, G. D. (2005). A typology of student engagement for American colleges and universities. *Research in Higher Education*, *46*(2), 185–209.

Pike, G. R., Kuh, G. D., & Massa-McKinley, R. C. (2008). First-year students' employment, engagement, and academic achievement: Untangling the relationship between work and grades. *Naspa Journal*, *45*(4), 560–582.

Pike, G. R., & Saupe, J. L. (2002). Does high school matter? An analysis of three methods of predicting first-year grades. *Research in Higher Education, 43*(2), 187–207.

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, *16*(4), 385–407.

Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education*, *76*(4), 343–362.

Poon, F. K., & Lin, A. M. (2015). Building Inclusive Education from the Ground Up: The Transformative Experience of HKRSS Tai Po Secondary School (Hong Kong 2006–2013). In *Pedagogies and Curriculums to (Re) imagine Public Education* (pp. 141–155). Springer.

Porter, S. R., & Umbach, P. D. (2006). Student Survey Response Rates across Institutions: Why Do they Vary? *Research in Higher Education*, *47*(2), 229–247. https://doi.org/10.1007/s11162-005-8887-1

Pretor Fok, W. (2007). Internationalisation of Higher Education in Hong Kong. *International Education Journal*, *8*(1), 184–193.

Prince, M., & Davies, M. (2001). Moderator teams: An extension to focus group methodology. *Qualitative Market Research: An International Journal*, *4*(4), 207–216.

Pritchard, M. E., & Wilson, G. S. (2003). Using emotional and social factors to predict student success. *Journal of College Student Development*, *44*(1), 18–28.

Radloff, A., & Coates, H. (2010). *Doing more for learning: Enhancing engagement and outcomes: Australasian Survey of Student Engagement: Australasian Student Engagement Report.* http://research.acer.edu.au/ausse/12/

Rayle, A. D., & Chung, K.-Y. (2007). Revisiting first-year college students' mattering: Social support, academic stress, and the mattering experience. *Journal of College Student Retention: Research, Theory & Practice*, *9*(1), 21–37.

Reason, R. D. (2001). *The use of merit-index measures to predict between-year retention of undergraduate college students*.

Reason, R. D., Terenzini, P. T., & Domingo, R. J. (2007). Developing social and personal competence in the first year of college. *The Review of Higher Education*, *30*(3), 271–299.

Rhine, S. L. (1989). The effect of state mandates on student performance. *The American Economic Review*, 231–235.

Ribera, A. K., Miller, A. L., & Dumford, A. D. (2017). Sense of Peer Belonging and Institutional Acceptance in the First Year: The role of high-impact practices. *Journal of College Student Development*, *58*(4), 545–563.

Rizvi, F., & Lingard, B. (2009). *Globalizing education policy*. Routledge.

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, *130*(2), 261.

Rodgers, R. F. (1990). Recent theories and research underlying student development. *College Student Development: Theory and Practice for the 1990's*, *49*, 27–79.

Romsa, K., Bremer, K. L., & Lewis, J. (2017). The Evolution of Student-Faculty Interactions: What Matters to Millennial College Students? *College Student Affairs Journal*, *35*(2), 85–99.

Rorty, R. (1999). *Philosophy and social hope*. Penguin UK. https://www.google.com/books?hl=zh-TW&lr=&id=27nO14BsqKcC&oi=fnd&pg=PT2&dq=philosophy+and+social+hope&ots=67YhMKMxZ1&sig=oFDBYWwzLeC27HU8ZYl1Uk4zK8A

Rosenthal, G. T., Folse, E. J., Alleman, N. W., Boudreaux, D., Soper, B., & Von Bergen, C. (2000). The one to one survey: Traditional versus nontraditional student satisfaction with professors during one to one contacts. *Caring*, *37*(30.10), 1–46.

Rugutt, J., & Chemosit, C. C. (2009). What motivates students to learn? Contribution of student-to-student relations, student-faculty interaction and critical thinking skills. *Educational Research Quarterly*, *32*(3), 16.

Russell*, T. (2005). Can reflective practice be taught? *Reflective Practice*, *6*(2), 199–204.

Ryan, J. F. (2005). Institutional expenditures and student engagement: A role for financial resources in enhancing student learning and development? *Research in Higher Education*, *46*(2), 235–249.

Sadler, D. R. (2009). Indeterminacy in the use of preset criteria for assessment and grading. *Assessment & Evaluation in Higher Education*, *34*(2), 159–179. https://doi.org/10.1080/02602930801956059

Sand, J., Robinson Kurpius, S. E., & Dixon Rayle, A. (2004). Academic stress and social support factors in Latino and Euro-American male and female college students. *Annual Meeting of the American Psychological Association, Honolulu, HI*.

Schellings, G., & Hout-Wolters, B. V. (2011). Measuring strategy use with self-report instruments: Theoretical and empirical considerations. *Metacognition and Learning*, *6*(2), 83–90. https://doi.org/10.1007/s11409-011-9081-9

Schneider, M. (2010). Finishing the First Lap: The Cost of First Year Student Attrition in America's Four Year Colleges and Universities. *American Institutes for Research*.

Schoeffel, M., van Steenwyk, M., & Kuriloff, P. (2011). How Do You Define Success?: An Action Research Project Leads to Curricular Change. *Independent School*, *70*(4), n4.

School of Design, The Hong Kong Polytechnic University. (2019). *PolyU Design: BA(Hons) Scheme Admissions Information*. https://www.sd.polyu.edu.hk/en/admission/portfolio-guidelines-ba

Schrader, P. G., & Brown, S. W. (2008). Evaluating the first year experience: Students' knowledge, attitudes, and behaviors. *Journal of Advanced Academics*, *19*(2), 310–343.

Schreiner, L. A. (2010). The "Thriving Quotient": A new vision for student success. *About Campus*, *15*(2), 2–10.

Schutte, N., & Malouff, J. (2002). Incorporating emotional skills content in a college transition course enhances student retention. *Journal of the First-Year Experience & Students in Transition*, *14*(1), 7–21.

Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. *Handbook of Qualitative Research*, *2*, 189–213.

Schwartz, R. A., & Washington, C. M. (2002). Predicting academic performance and retention among African American freshmen men. *NASPA Journal*, *39*(4), 354–370.

Scott, P. (1995). *The meanings of mass higher education*. McGraw-Hill Education (UK).

Seale, C. (2004). Validity, reliability and the quality of research. *Researching Society and Culture*, 71–83.

Shah, M., Bennett, A., & Southgate, E. (2015). *Widening higher education participation: A global perspective*. Chandos Publishing.

Shek, D. T. (2006). *Chinese family research: Puzzles, progress, paradigms, and policy implications*. Sage Publications Sage CA: Thousand Oaks, CA.

Shih, T.-H., & Fan, X. (2008). Comparing Response Rates from Web and Mail Surveys: A Meta-Analysis. *Field Methods*, *20*(3), 249–271. https://doi.org/10.1177/1525822X08317085

Sidelinger, R. J., Bolen, D. M., McMullen, A. L., & Nyeste, M. C. (2015). Academic and social integration in the basic communication course: Predictors of students' out-of-class communication and academic learning. *Communication Studies*, *66*(1), 63–84.

Smith, R. (2003). Changing Institutional Culture for First-Year Students and Those Who Teach Them. *About Campus*, *8*(1), 3–8.

Soria, K. M. (2012). *Advising satisfaction: Implications for first-year students' sense of belonging and retention*.

Stanford, J. S., Rocheleau, S. E., Smith, K. P. W., & Mohan, J. (2017). Early undergraduate research experiences lead to similar learning gains for STEM and Non-STEM undergraduates. *Studies in Higher Education*, *42*(1), 115–129. https://doi.org/10.1080/03075079.2015.1035248

Starke, M., Harth, M., & Sirianni, F. (2001). Retention, bonding, and academic achievement: Success of a first-year seminar. *Journal of the First-Year Experience & Students in Transition*, *13*(2), 7–36.

Stelnicki, A. M., Nordstokke, D. W., & Saklofske, D. H. (2015). Who Is the Successful University Student? An Analysis of Personal Resources. *Canadian Journal of Higher Education*, *45*(2), 214–228.

Stewart, D. W., & Shamdasani, P. N. (2014). *Focus groups: Theory and practice* (Vol. 20). Sage publications. https://www.google.com/books?hl=en&lr=&id=YU0XBAAAQBAJ&oi=fnd&pg=PP1&dq=Focus+group:+Theory+and+practice&ots=bCvOJKY4OE&sig=wnobjf3KUnFqC50VXN0Bt0cCX0I

Stewart, S., Lim, D. H., & Kim, J. (2015). Factors Influencing College Persistence for First-Time Students. *Journal of Developmental Education*, *38*(3), 12.

Strauss, L., & Volkwein, J. (2002). Comparing Student Performance and Growth in 2- and 4-Year Institutions. *Research in Higher Education*, *43*(2), 133–161. https://doi.org/10.1023/A:1014495823183

Strayhorn, T. L. (2008a). Fittin'in: Do diverse interactions with peers affect sense of belonging for Black men at predominantly White institutions? *NASPA Journal*, *45*(4), 501–527.

Strayhorn, T. L. (2008b). How college students' engagement affects personal and social learning outcomes. *Journal of College and Character*, *10*(2).

Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students*. Routledge.

Strayhorn, T. L. (2018). *College students' sense of belonging: A key to educational success for all students*. Routledge.

Strike, K. (2006). The ethics of educational research. *Handbook of Complementary Methods in Education Research*, 57–73.

Supiano, B. (2019). Grades Can Undermine Learning. What Should Professors Use Instead? Alternative approaches can help shift students' attention from how they did to what they learned.(In Focus / TEACHING). *The Chronicle of Higher Education*, *65*(38), A12.

Swanson, J. M. (1986). The formal qualitative interview for grounded theory. *From Practice to Grounded Theory*, *1*.

Tait, H., & Godfrey, H. (1999). Defining and assessing competence in generic skills. *Quality in Higher Education*, *5*(3), 245–253.

Tanner, J. L., & Arnett, J. J. (2016). The emergence of emerging adulthood: The new life stage between adolescence and young adulthood. In *Routledge Handbook of Youth and Young Adulthood* (pp. 50–56). Routledge.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). Sage.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Sage Publications Inc. https://www.google.com/books?hl=zh-TW&lr=&id=XvMAYYvS1rEC&oi=fnd&pg=PT1&dq=foundations+of+mixed+methods+research&ots=hNxsIQ3mQn&sig=OfHsKlnX5H6kxHgBGYONo1zCZnU

Terenzini, P. T., Cabrera, A. F., Colbeck, C. L., Parente, J. M., & Bjorklund, S. A. (2001). Collaborative learning vs. lecture/discussion: Students' reported learning gains. *Journal of Engineering Education*, *90*(1), 123–130.

Terenzini, P. T., & Pascarella, E. T. (1991). Twenty years of research on college students: Lessons for future research. *Research in Higher Education*, *32*(1), 83–92.

Terenzini, P. T., Springer, L., Pascarella, E. T., & Nora, A. (1995). Influences affecting the development of students' critical thinking skills. *Research in Higher Education*, *36*(1), 23–39. https://doi.org/10.1007/BF02207765

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, *37*(1), 1–22. https://doi.org/10.1007/BF01680039

The Education University of Hong Kong S. A. O. (2019). *Profile of New Full-time Students*. EdUHK - Student Affairs Office. https://www.eduhk.hk/sao/?p=221

The Hong Kong Polytechnic University. (2013). *Curriculum Framework*. https://www.polyu.edu.hk/ous/4-year-undergraduate-degree-curriculum/curriculum-framework

The Hong Kong Polytechnic University. (2018a). *Curriculum Structure*. https://www.polyu.edu.hk/ogur/student/4yr/curriculum-structure

The Hong Kong Polytechnic University. (2018b). *Strategic Plan 2019/20—2024/25*. https://www.polyu.edu.hk/cpa/splan/StrategicPlan2019/ebook/en/index.html

The Hong Kong Polytechnic University. (2019a). *Profile of New Students*. http://www.polyu.edu.hk/stars/about-stars/publications/profile-of-new-students-(for-staff-only).html

The Hong Kong Polytechnic University. (2019b). *Strategic Plan 2019/20—2024/25*. https://www.polyu.edu.hk/web/en/about_polyu/motto_vision_mission/index.html

The Hong Kong Polytechnic University. (2019c). *Strategic Plan 2019/20—2024/25*. https://www.polyu.edu.hk/cpa/splan/StrategicPlan2019/index.html

The Hong Kong SAR, Educational Bureau. (2018). *Degree-awarding higher education institutions*. https://www.edb.gov.hk/en/edu-system/postsecondary/local-higher-edu/institutions/index.html

The University of Hong Kong. (2018). *Credit Accumulation and Transfer Policy for Undergraduate*. http://www.handbook.hku.hk/ug/full-time-2015-16/important-policies/credit-accumulation-and-transfer-policy

The University of Hong Kong, C. of D. and R. for S. (2019). *A profile of new full-time undergraduate students*. https://www.cedars.hku.hk/index.php?route=information/publication

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, *27*(2), 237–246.

Thomas, L. (2002). Student retention in higher education: The role of institutional habitus. *Journal of Education Policy*, *17*(4), 423–442.

Thomas, L. (2012). Building student engagement and belonging in Higher Education at a time of change. *Paul Hamlyn Foundation*, *100*.

Thompson, L. F., Surface, E. A., Martin, D. L., & Sanders, M. G. (2003). From paper to pixels: Moving personnel surveys to the Web. *Personnel Psychology*, *56*(1), 197–227.

Thompson, M. D. (2001). Informal student-faculty intraction: Its relationship to eductional gains in science and mathematics among community college students. *Community College Review*, *29*(1), 35–57.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 603–618.

Tinto, V. (2001). *Taking student success seriously: Rethinking the first year of college. Retrieved April 13, 2005*.

Tinto, Vincent. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, *45*(1), 89–125.

Tinto, Vincent. (1987). *Leaving college: Rethinking the causes and cures of student attrition.* ERIC. http://eric.ed.gov/?id=ED283416

Tinto, Vincent. (1988). Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving. *The Journal of Higher Education*, *59*(4), 438–455. https://doi.org/10.2307/1981920

Tinto, Vincent. (1993). *Leaving college: Rethinking the causes and cures of student attrition.* (2nd ed.). Chicago: University of Chicago Press. http://eric.ed.gov/?id=ED283416

Tinto, Vincent. (2006). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory & Practice*, *8*(1), 1–19.

Tinto, Vincent. (2010). From theory to action: Exploring the institutional conditions for student retention. In *Higher education: Handbook of theory and research* (pp. 51–89). Springer. http://link.springer.com/chapter/10.1007/978-90-481-8598-6_2

Tinto, Vincent, & Pusser, B. (2006). Moving from theory to action: Building a model of institutional action for student success. *National Postsecondary Education Cooperative*, 1–51.

Tomlinson, M. (2008). 'The degree is not enough': Students' perceptions of the role of higher education credentials for graduate work and employability. *British Journal of Sociology of Education*, *29*(1), 49–61.

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press. https://www.google.com/books?hl=zh-

TW&lr=&id=bjVYdyXXT3oC&oi=fnd&pg=PR11&dq=the+psychology+of+survey+response&ots=ZZ1nHOayCR&sig=A2Tm4WpPNBJxuxdynL4aOj_X1-w

Tracy, S. J. (2013). Qualitative research methods. *UK: Wiley-Blackwell*.

Tross, S. A., Harper, J. P., Osher, L. W., & Kneidinger, L. M. (2000). Not just the usual cast of characteristics: Using personality to predict college performance and retention. *Journal of College Student Development*.

Trow, M. (1999). From mass higher education to universal access: The American advantage. *Minerva*, 303–328.

Tung, C. (2000). *2000 Policy Address*. https://www.policyaddress.gov.hk/pa00/pa00_e.htm

Turner, P., & Thompson, E. (2014). College retention initiatives meeting the needs of millennial freshman students. *College Student Journal*, *48*(1), 94–104.

Tyler, R. W. (1949). Basic principles of curriculum and instruction. *Syllabus for Education. Chicago*.

Tyler, R. W. (1959). *Basic principles of curriculum and instruction: Syllabus for Education 305*. University of Chicago Press.

Umbach, P. D., & Kuh, G. D. (2006). Student experiences with diversity at liberal arts colleges: Another claim for distinctiveness. *The Journal of Higher Education*, *77*(1), 169–192.

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education*, *46*(2), 153–184.

Underdal, A. (2010). *Implications of the change from elite to mass or multi-purpose institutions*. 7.

University Grants Committee of Hong Kong. (2004a). *Hong Kong Higher Education: To make a difference, to move with times*. https://www.ugc.edu.hk/eng/ugc/about/publications/major_reports.html

University Grants Committee of Hong Kong. (2004b). *Hong Kong Higher Education—Integration Matters* [Official]. https://www.ugc.edu.hk/eng/ugc/about/publications/major_reports.html

University Grants Committee of Hong Kong. (2016). *Governance in UGC-funded Higher Education Institutions in Hong Kong—Report of the University Grants Committee*. https://www.ugc.edu.hk/eng/ugc/about/publications/report/report30032016.html

University Grants Committee of Hong Kong. (2019a). *CDCF Data Mart- Statistics*. https://cdcf.ugc.edu.hk/cdcf/searchStatSiteReport.action#

University Grants Committee of Hong Kong. (2019b). *First-year-First-Degree Students*. https://cdcf.ugc.edu.hk/cdcf/searchStatSiteReport.action

Upcraft, M. L., & Gardner, J. N. (1989). *The Freshman Year Experience. Helping Students Survive and Succeed in College.* ERIC.

Upcraft, M. L., Gardner, J. N., & Barefoot, B. O. (2004). *Challenging and Supporting the First-Year Student: A Handbook for Improving the First Year of College.* ERIC. http://eric.ed.gov/?id=ED496369

Upcraft, M. L., Gardner, J. N., Barefoot, B. O., Angelo, T. A., & Cross, K. P. (2008). Challenging & Supporting the first-year student. *Community College Journal*.

Van der Meer, J., Jansen, E., & Torenbeek, M. (2010). 'It's almost a mindset that teachers need to change': First-year students' need to be inducted into time management. *Studies in Higher Education*, *35*(7), 777–791.

Van der Zanden, P. J., Denessen, E., Cillessen, A. H., & Meijer, P. C. (2019). Patterns of success: First-year student success in multiple domains. *Studies in Higher Education*, 1–15.

Waggoner, D., & Goldman, P. (2005). Universities as communities of fate. *Journal of Educational Administration*, *43*(1), 86–101. https://doi.org/10.1108/09578230510577317

Webber, K. L., Krylow, R. B., & Zhang, Q. (2013). Does involvement really matter? Indicators of college student success and satisfaction. *Journal of College Student Development*, *54*(6), 591–611.

Webster, B. J., & Yang, M. (2012). Transition, induction and goal achievement: First-year experiences of Hong Kong undergraduates. *Asia Pacific Education Review*, *13*(2), 359–368.

Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). 'It was nothing to do with the university, it was just the people': The role of social support in the first-year experience of higher education. *Studies in Higher Education*, *30*(6), 707–722.

Williams, M. L., Waldauer, C., & Duggal, V. G. (1992). Gender differences in economic knowledge: An extension of the analysis. *The Journal of Economic Education*, *23*(3), 219–231.

Wischusen, S. M., Wischusen, E. W., & Pomarico, S. M. (2011). Impact of a short pre-freshman program on retention. *Journal of College Student Retention: Research, Theory & Practice*, *12*(4), 429–441.

Woltman, H., Feldstain, A., MacKay, J. C., & Rocchi, M. (2012). An introduction to hierarchical linear modeling. *Tutorials in Quantitative Methods for Psychology*, *8*(1), 52–69.

Woosley, S. A., & Miller, A. L. (2009). Integration and institutional commitment as predictors of college student transition: Are third week indicators significant? *College Student Journal*, *43*(4), 1260.

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, *10*(3), JCMC1034.

Yamada, A. (2016). Quality assurance in higher education in Japan: Examining a case study of the empowerment informatics program. In *Quality Assurance: Analysis, Methods and Outcomes* (pp. 81–97). Scopus.

Yang, K. (2010). Good thinking. *South China Morning Post*, 19 July.

Yang, R. (2003). Globalisation and Higher Education Development: A Critical Analysis. *International Review of Education*, *49*(3), 269–291. https://doi.org/10.1023/A:1025303303245

Yazedjian, A., Toews, M. L., Sevin, T., & Purswell, K. E. (2008). ‘ It’s a Whole New World’: A Qualitative Exploration of College Students’ Definitions of and Strategies for College Success. *Journal of College Student Development*, *49*(2), 141–154.

Yin, H. (2018). What motivates Chinese undergraduates to engage in learning?: Insights from a psychological approach to student engagement research. *Higher Education*, *76*(5), 827–847. https://doi.org/10.1007/s10734-018-0239-0

Yin, R. K. (1994). *Case study research: Design and methods. 2d ed. Applied Social Methods Research Series*. Thousand Oaks (California): Sage Publications, Inc.

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research & Evaluation*, *20*(5), 2.

Yorke, M. (2000). The quality of the student experience: What can institutions learn from data relating to non-completion? *Quality in Higher Education*, *6*(1), 61–75.

Yorke, M. (2004). *Leaving early: Undergraduate non-completion in higher education*. Routledge. https://www.google.com/books?hl=zh-TW&lr=&id=Cj6RAgAAQBAJ&oi=fnd&pg=PR7&dq=York+1999,+leaving+early:+undergraduate+non-completion+in+higher+education&ots=x8bY3Q9JK7&sig=cNBXGpcGWTpR5lBD_YNmih1i3xY

Yorke, M., & Longden, B. (2004). *Retention and student success in higher education*. McGraw-Hill Education (UK). https://www.google.com/books?hl=zh-TW&lr=&id=4azlAAAAQBAJ&oi=fnd&pg=PP1&dq=Yorke+and+Longden+2004&ots=QahwowxoCP&sig=D5kp6K5IU9uPxNwqRBGWZG0VZNs

Yorke, M., & Longden, B. (2008). The first-year experience of higher education in the UK. *Higher Education Academy. Available at Http://Www. Heacademy. Ac. Uk/Assets/York/Documents/Resources/Publications/FYEFinalReport. Pdf [Accesses on 2 September 2010] The International Journal of Interdisciplinary Social Sciences*. http://jisctechdis.ac.uk/assets/documents/archive/FYEFinalReport.pdf

Young-Jones, A. D., Burt, T. D., Dixon, S., & Hawthorne, M. J. (2013). Academic advising: Does it really impact student success? *Quality Assurance in Education*, *21*(1), 7–19.

Zammit, K., Vickers, M., Hibbert, E., & Power, C. (2017). Equity buddies: Building communities of practice to support the transition and retention of students through their first year at university. In *Implementing Communities of Practice in Higher Education* (pp. 373–394). Springer.

Zepke, N. (2015). Student engagement research: Thinking beyond the mainstream. *Higher Education Research & Development*, *34*(6), 1311–1323.

Zepke, N., Leach, L., & Butler, P. (2010). Student engagement: What is it and what influences it. *Wellington, New Zealand*. http://www.tlri.org.nz/sites/default/files/projects/9261-Introduction.pdf

Zepke, N., Leach, L., & Prebble, T. (2005). Now you've got them, can you expect to keep them? Factors that influence student departure and persistence. *New Zealand Journal of Educational Studies, 40*(1/2), 181.

Zhang, Z., Hu, W., & McNamara, O. (2015). Undergraduate student engagement at a Chinese university: A case study. *Educational Assessment, Evaluation and Accountability*, *27*(2), 105–127. https://doi.org/10.1007/s11092-015-9213-x

Zhao, C.-M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, *45*(2), 115–138.

Zhu, H., & Arnold, K. (2013). Understanding student engagement and achievement in Chinese universities: A study of Beijing college students. *International Journal of Chinese Education*, *2*(1), 70–92.

Zohar, D., Marshall, I., & Marshall, I. N. (2000). *SQ: Connecting with our spiritual intelligence*. Bloomsbury Publishing USA.

Appendices

Appendix 1 Profile of participants in the student focus groups

Students	Group	Gender	Age	Local or non-local	Study discipline
Student 1	1	Male	19	Local	Broad Discipline of Hotel & Tourism Management
Student 2	1	Male	18	Local	BEng (Hons) Civil Engineering
Student 3	1	Female	19	Non-local (Malaysia)	BBA (Hons) Accounting & Finance
Student 4	1	Male	18	Local	BBA (Hons) International Shipping and Transport Logistic
Student 5	1	Male	19	Local	Broad Discipline of Hotel & Tourism Management
Student 6	1	Female	20	Local	BBA (Hons) Global Supply Chain Management
Student 7	1	Female	18	Non-local (Singapore)	BSc (Hons) Mental Health Nursing
Student 8	1	Female	18	Local	BBA (Hons) International Shipping and Transport Logistic
Student 9	1	Male	21	Local	BA (Hons) Social Policy & Administration
Student 10	1	Male	19	Local	Broad discipline of Construction & Environment
Student 11	2	Female	19	Non-local (Singapore)	Building Technology and Management (Surveying)
Student 12	2	Female	18	Non-local (Malaysia)	Broad discipline of Construction & Environment
Student 13	2	Male	19	Local	BSc (Hons) Mental Health Nursing
Student 14	2	Male	19	Local	Building Technology and Management (Surveying)
Student 15	2	Female	21	Non-local (US)	BEng (Hons) Civil Engineering
Student 16	2	Male	21	Local	Broad discipline of Construction & Environment
Student 17	2	Male	18	Local	BSc (Hons) Mental Health Nursing
Student 18	2	Female	19	Non-local (Europe)	Broad Discipline of Hotel & Tourism Management

Students	Group	Gender	Age	Local or non-local	Study discipline
Student 19	2	Female	18	Non-local (UK)	Broad discipline of Construction & Environment
Student 20	2	Female	18	Non-local (South Korea)	Broad Discipline of Hotel & Tourism Management
Student 21	3	Female	20	Local	BA (Hons) Social Policy & Administration
Student 22	3	Female	18	Local	Broad discipline of Construction & Environment
Student 23	3	Male	18	Local	BSc (Hons) Mental Health Nursing
Student 24	3	Female	19	Local	Broad Discipline of Hotel & Tourism Management
Student 25	3	Male	19	Local	BSc (Hons) Surveying
Student 26	3	Female	18	Local	BBA (Hons) Global Supply Chain Management
Student 27	3	Female	22	Local	Broad discipline of Construction & Environment
Student 28	3	Male	19	Local	BBA (Hons) Accounting & Finance
Student 29	3	Male	20	Local	BEng (Hons) Civil Engineering
Student 30	3	Female	18	Local	BBA (Hons) Global Supply Chain Management
Student 31	3	Female	19	Local	BBA (Hons) International Shipping and Transport Logistic

Appendix 2 Email invitations for the student focus groups

Email invitation to participating the Student Focus Group on “first Year Experience”

Email invitation to participating the "First Year Experience" Study - Focus Group

Dear students,

Thank you for registering the “**First Year Experience study**” focus group and you will now be required to participate ONE focus group to share some of your first-year experience. There will be a list of time for you to choose from and please register ONE focus group only in the web link provided: http://doodle.com/poll/3g8svqkkwmepizwx

There is a quota (maximum of 12 students in each group) in the registration for each focus group and the registration is on a **First Come First Serve** basis. Please follow the instruction in the web link for the registration of the focus group you like to attend. Focus group 4 and 5 will be conducted in English while the others may be in Cantonese (unless English is requested). The location of the focus group is at Room TU411.

You will be required to complete the Consent Form (as attached) and bring it with you to the focus group discussion. If you are **below aged 18**, please get it signed by your guidance/parents before you come to the focus group. Participation will NOT be allowed if you do not have the consent form ready. If you have any queries, please email me on kannass.chan@polyu.edu.hk . In case if you cannot attend any of the timeslot provided, please contact Suke Wong (sin-kei.wong@polyu.edu.hk) as soon as possible for further arrangement.

Thank you in advance for your participation.

Best regards,

Kannass

Reminder email to participating the Student Focus Group on “first Year Experience”

Reminder email to participating the "First Year Experience" Study - Focus Group

Dear students,

The focus group for the captioned study will commence this week and if you haven’t registered any of the group yet, please do so via http://doodle.com/poll/3g8svqkkwmepizwx

Please make sure to bring your Consent Form (as attached) and get it signed before you come to the session.

Please be punctual and **NO late comers will be allowed** to join the sessions once the focus group is started.

In case if you cannot attend any of the timeslot provided, please contact Suke Wong (sin-kei.wong@polyu.edu.hk) as soon as possible for further arrangement.

See you soon and thank you in advance for your participation

Best regards,

Kannass

Summary of Project

Summary of Project

Project Title: Student's perception of a successful first-year experience and its associated factors

1. **The project synopsis**. The project title of my research is **Student's perception of a successful first-year experience and its associated factors.** The key aim of this study is understand what constitutes a good first-year experience and what would be considered as a successful first-year experience in student's perspective at this University. This study will employ a mixed method design and there will be two phases to this study. Students will be asked about their learning experience during the first year of study. Focus group or student interviews will be used to collect student feedback on what constitutes student's first year success and what are the major factors affecting this success. Being a participant in this study, you will experience or witness the process of how qualitative inquiry could contribute to the knowledge in psychology in terms of describing phenomenon in depth, and how exploration in a topic in depth can help to discover more meaning. This study will provide you as a student to understand the process to develop hypotheses or theoretical framework based on the focus-group interview you are participating at. For more details about this project, please see the attached the project brief.

2. HSEARS ref no. is HSEARS20160622004

3. **Proposed reflection questions**:

   a. Research design: This research adopts a mixed methods approach, which starts with qualitative (qual) followed by quantitative (quan) study although your participation will only be included in the first part of the study. What is the purpose of using this sequence (qual-quan) and please states its advantages?

   b. Research ethics issues: This study involves students as participants in both focus group interviews and online survey. Are there any ethics issues that needed to be concerned, if yes, what are they (e.g. you can think about the entire research process including data collection, data analysis and reporting)?

   c. Subject matter: This study is about student's perception of a successful first-year experience and its associated factors. Can you think of some factors that will influence first-year student's achievement? In attempt to answer this question, you may want to first think about what is first-year success (it could be academic performance or other non-academic achievement)?

4 **Project description**: This study aims to understand what constitutes a good first-year experience at this University and what would be considered as a successful first-year experience in student's perspective. You will **ONLY** be required to participate in the first phase of the study where it employs a qualitative method. You will be participated in an approximately 45-minute focus-group discussion to share your views and experience at this University being a first-year student. This phase of the study is important as it provides useful information (e.g. successful indicators, factors) for the second phase of the quantitative study. Your participation will contribute to the development of a theoretical model and help to form a survey for the second phase of the quantitative study.

1

Project Brief:

Student's perception of a successful first-year experience and its associated factors

Background

The first year of undergraduate study is recognized to be crucial to student success (McInnis, James, & McNaught, 1995). In particular, initial experience on campus has been showed to impact on students' retention in higher education (Kantanis, 2000). Research pointed out that first-year students often encountered all sorts of problems when they started their study at university, and these problems are often associated with academic, social and personal issues such as lack of self-management skills and study skills (Yorke, 2004); having difficulty to make new friends (Palmer, O'Kane, & Owens, 2009); poor time-management (Bowles, Dobson, Fisher, & McPhail, 2009); problems with independent learning. Barefoot (2000) further pinpointed that first-year students often lack motivation, having problem in writing, not engaged academically and having unrealistic expectation at college, and these phenomenon is not uncommon elsewhere in the world among first-year students at higher education. All these issues signify the importance of first-year study and will be addressed in this study.

Aims and objectives

The key aim of this study is understand what constitutes a good first-year experience and what would be considered as a successful first-year experience in student's perspective at this University, and its associated factors affecting a successful first-year experience. In attempt to investigate this aim, there are two research questions: 1) what constitutes student success in the context of first-year study, and 2) what are the factors affecting student success in first year? This study will explore student's first-year experience in terms of attained learning gains, learning experience in classroom and outside classroom, and student's engagement in curricular and extra-curricular activities.

Research methods

This study will employ a mixed method design and there will be two phases to this study. **You will ONLY be required to participate in the first phase of the study** where it employs a qualitative method. Student will be asked about their learning experience during the first year of study and what would be considered as a successful first-year experience. Focus group or student interviews will be used to collect student feedback on what constitutes student's first year success and what are the major factors affecting this success. Interviews or focus group in this phase will last for approximately 30-45 minutes and it aims to capture some measures of student's perception of successful first-year experience. This phase of the study is important as

it provides useful information (e.g. successful indicators, factors) for the second phase of the quantitative study. Your participation would contribute to the development of a theoretical model and help to form a survey for the second phase of the quantitative study.

Research sampling

Phase 1: Qualitative (Focus group/in-depth interviews)

Students from 6 Faculties and 2 Schools will be invited to participate in this qualitative phase in the hope to include views from all Faculties/Schools. Approximately 3-4 focus group interviews will be conducted, with about 8-10 students in each group (i.e. a total of 24-40 students to be included). In other words, this sample will include at least one student from each Faculty/School. The focus group interviews will be conducted after semester 1 so that students would be able to experience at least 1 semester of their first-year study before interview. Depending on number of students in each group and the ability to get the students in the same timeslot for the focus group, small-group interviews may be conducted instead.

Phase 2: Quantitative [not the focus for students' participation in APSS111/1A07 research project]

Date collection procedure

The data collection will take place in two phase:

Phase 1: qualitative (Jan 2017)

Focus group/ in-depth interviews will be conducted near the end of semester 1, where students have experience for at least 1 semester during their first-year study at The Hong Kong Polytechnic University. Recruitment of students will be done via subject teachers of different faculties/departments so that students from each faculty will be included in this phase. Snowball sampling technique will be employed and researcher's personal network will be used.

Phase 2: quantitative [not the focus for students' participation in APSS111/1A07 research project]

Data analysis

Thematic analysis will be used to analyze the qualitative findings from the focus groups/ in-depth interviews. Themes and ideas will be identified in order to form the survey to be used in second phase of the study.

Ethical consideration

Ethical approval will be obtained from the Human Subjects Ethics Sub-Committee of the Hong Kong Polytechnic University, and consent will be obtained from the students before the study. It is anticipated that the study will not pose any physical or psychological harm to the participants. The contact details of either the ethical or the project in-charge personnel will be clearly shown to all participants.

Reference

Barefoot, B. O. (2000). The first-year experience. *About Campus*, *4*(6), 12–18.

Bowles, A. B., Dobson, A., Fisher, R., & McPhail, R. (2009). *An exploratory investigation into first year student transition to university*. Griffith University.

Kantanis, T. (2000). The role of social transition in students': adjustment to the first-year of university. *Journal of Institutional Research*, *9*(1), 100–110.

McInnis, C., James, R., & McNaught, C. (1995). First year on campus. *Canberra: AGPS*. Retrieved from https://www.cshe.unimelb.edu.au/people/james_docs/FYE.pdf

Palmer, M., O'Kane, P., & Owens, M. (2009). Betwixt spaces: Student accounts of turning point experiences in the first-year transition. *Studies in Higher Education*, *34*(1), 37–54.

Yorke, M. (2004). *Leaving early: Undergraduate non-completion in higher education*. Routledge. Retrieved from https://www.google.com/books?hl=zh-TW&lr=&id=Cj6RAgAAQBAJ&oi=fnd&pg=PR7&dq=York+1999,+leaving+early:+undergraduate+non-completion+in+higher+education&ots=x8bY3Q9JK7&sig=cNBXGpcGWTpR5lBD_YNmih1i3xY

Appendix 3 Ethics application to the University of Bristol (Phase 1)

GSoE RESEARCH ETHICS FORM

It is important for members of the Graduate School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct. Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. *This form must therefore be completed for each piece of research carried out by members of the School, both staff and students*

The GSoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

1. **Arrange a meeting with a fellow researcher**
   The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.
2. **Complete the form on the back of this sheet**
   The form is designed to act as a record of your discussion and any decisions you make.
3. **Upload a copy of this form and any other documents (e.g. information sheets, consent forms) to the online ethics tool at : https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications.**

   Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the GSoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion

You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See http://www.bristol.ac.uk/education/research/networks/ethicnet for links to several such sets of guidelines.

1. Researcher access/ exit
2. Information given to participants
3. Participants right of withdrawal
4. Informed consent
5. Complaints procedure
6. Safety and well-being of participants/ researchers
7. Anonymity/ confidentiality
8. Data collection
9. Data analysis
10. Data storage
11. Data Protection Act
12. Feedback
13. Responsibilities to colleagues/ academic community
14. Reporting of research

1

Name(s): Chan, Kannass
Proposed research project: Student's perception of a successful first-year experience and its associated factors at a university in Hong Kong? A case-study with mixed-methods approach
Proposed funder(s): N.A.
Discussant for the ethics meeting: Indie Chung
Name of supervisor: Jo Rose
Has your supervisor seen this submitted draft of your ethics application? Y/~~N~~

Please include an outline of the project or append a short (1 page) summary:

The first-year of undergraduate study is recognized to be crucial to student success (McInnis, James & McNaught, 1995). However, while many research focused on student persistence and retention as an outcome of student success, other are measured by academic performance, and there haven't been a lot of consensus on the definition of student success in higher education. What constitutes first-year success could mean very differently to different stakeholders, and therefore the study attempts to investigate student's perception of a successful first-year experience in Hong Kong.

The study employs a mix-method approach; first phase of the study will be carried out qualitatively while second phase in quantitative method. Results from the first phase will provide a foundation and lay out a structure to inform the second phase of the study. Thus, this ethic application is only applied for the first phase of the study (i.e. the qualitative method via student focus groups).

The aims of this phase is to gain understanding of the first-year experience and how students define first-year success. The major research questions include:

- What constitutes student first-year success?
- Why are these first-year success important?
- How important are they in first year of university study?

This study is situated in the pragmatism paradigm and it is a case study at the university I am currently being employed at. I am working as an educational developer, at the central office of the university and I work closely with teachers on educational development matters, of which I normally do not directly in contact with students. The first phase of the study employs a qualitative method, which is exploratory in nature, and student focus groups will be used as the data collection method. First-year students will be recruited to participate the student focus group to discuss issues in relation to their experience near the end of their first-year.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

I have paid attention and considered different kinds of ethical issues that may arise in my study. I understand that I, as a researcher, have the responsibility to ensure my research follows the ethic principle throughout the study in the process of research planning, data collection and data analysis (Punch, 2013).

The first step to proceed with the ethical approach is to discuss with my fellow classmate and supervisor about the possible ethical problems that may arise from this study. The purpose of doing this is to seek independent opinions and different perspectives of viewing and dealing with potential ethical issues in this kind of educational research.

The following aspects are the issues of ethical concern for this study:

1. Researcher access/exit
   The researcher has gained the approval from the associate director of the Educational Development Centre of a university in Hong Kong, to conduct this study. This Centre is a central unit of the University, responsible in providing strategies and future direction to the university in relation to teaching and learning matters.

   All first-year students at this university will be the potential participants of this study. Email invitation will be sent out to all first-year students via a faculty-based course at a university in Hong Kong. Each year, over 600 students enrol from different faculties, in this fundamental course called Introduction to Psychology. This course is chosen because of its large number of student enrolment as well as the diversity in student's disciplines. The researcher has also gained consent from the teaching team as well in recruiting students for the current study.

   The researcher is also aware of the potential conflict of interest, ethical and moral dilemmas. For example, students may worry about what they say in the student focus group impact on their performance and grades given by teachers. By working at the central unit of the university, the researcher simply has no direct contact with students. However, the researcher will assure all participants at the beginning of the group discussion by explicitly explaining her role to students, and also highlighting the aims of this study as to better understand how student's experience can be supported by the university. In this way, it will help students to tell researcher their true perception about their first-year experience rather than suppressing their actual feelings.

   After the data collection is completed, a thank you letter will be issued to all students who participated the study.

2. Information given to participants
3. Participants right of withdrawal
   The researcher will give a document with information about the study to all participants (see attachment) before they decide to participate the study. The information document includes the purpose of the study, the procedure of data collection, how the study ensures data confidentiality, and also inform participants right of withdrawal.

4. Informed consent
5. Complaints procedure

The researcher will give all participants the information document and informed the participants that their participation is voluntary and they have the right to withdraw from this study at any time, up to two weeks after their participation of the discussion, without any reasons. Complaint procedures will be introduced at the beginning of the student group and the contact of supervisor will be included in the information document for this purpose.

6. Safety and well-being of participants/researchers
   All the student group discussions will be held at the campus and there is no unreasonable safety or well-being issues of researcher and participants in this study.

7. Anonymity/confidentiality
   The identification of participants will be anonymous and kept confidential in any circumstances throughout the data analysis and reporting processes. All participants will have a pseudo-name (or pseudo-ID) rather than actual name and the researcher will ensure that no identification of students will be shown in the report if direct quote are to be used.

8. Data collection
   Data collection will be conducted in safe environment. Student group discussion will be conducted in the arranged classrooms at the university. Students will be informed with the procedure, issues with anonymity and confidentiality, their rights to withdraw, and will be provided with channel of communication with any concern in relation to their participations. Data collection will start near the completion of student's first-year study.

9. Data analysis
10. Data storage
11. Data Protection Act
    Data will be kept securely and that the form of any publication will not directly or indirectly lead to a breach of agreed confidentiality and anonymity. The researcher will comply with the legal requirements in relation to the storage and use of personal data as lay out in the Personal Data (Privacy) Ordinance (Cap. 486) (The Hong Kong Personal Data Privacy Ordinance). Once the study is completed, all data stored and analysed for this study will be archived electronically in a password protected folder in a password protected computer located in the researcher's computer. The data will be kept securely for up to seven years after any journal articles or other work relating to the study are published.

12. Feedback
    The researcher will offer the participants a summary of the findings from the focus group if they would like it.

13. Responsibilities to colleagues/academic community
14. Reporting of research

The researcher will use the data and findings of this study mainly for her doctoral dissertation. The findings may also be published afterwards.

15. Building trust with the students

In many kinds of the qualitative research, the process of establishing rapport, trust and respect for the participants are essential (Douglas, 1985). This generally refers the rapport between interviewers and interviewee, and generally include apprehension, exploration, co-operation and participation (Rubin & Rubin, 2011).

In order to building "trust" throughout the student discussions, I will:

- ask questions that are not too sensitive and intrusive in the student focus groups;
- not ask questions that will induce negative emotions at the beginning and near the end of the student discussions to avoid the "carry-over" effect after the student discussions;
- obtain consent for audio recording the student discussions;
- ensure that I capture students' perspective as accurate as possible by "re-listening" to the audio files more than once; and
- assure students that their information will be kept confidential.

16. Approval only for the first-phase of the study

Ethic should be seen as an on-going process rather than being an "one-off" transaction. The application for this ethic approval is sought only for the first phase of my doctoral research study, as the first phase is an exploratory type of study that will lay a foundation for the second phase of the study. Thus, another ethic application will be made and seek approval before the second phase of the study commences.

17. Language issue

This study is conducted at one of the university in Hong Kong, where participants are the first-year university students, of the majority are speaking Chinese (i.e. Cantonese) as their mother tongue. As a result, student discussions will be conducted in Chinese, supplement with English if necessary. If it is the case, the transcription of the interview will be coded in Chinese and the translation into English will be the carried out during the analysis stage. The purpose of this is the avoidance of losing important information during translation and to retain more true meaning of the data.

18. Age of participants

The participants of this study are the first-year university students, who normally would be over aged 18. However, there is still some possibility of potential students whose age are under 18. For the practical concern, the study will impose a criterion to recruit students who are aged 18 or above due to the complexity of gaining parents/guidance's consensus.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the GSoE's ethics co-ordinators who will suggest possible ways forward.

Signed:	(Researcher) Signed:	(Discussant)
Date: 15 May 2017	Kannass Chan	Indie Chung
		Jo Rose (Supervisor)

Reference:

Douglas, J. D. (1985). *Creative interviewing*. Beverly Hills, CA: Sage.

McInnis, C., James, R., & McNaught, C. (1995). First year on campus. *Canberra: AGPS*. Retrieved from https://www.cshe.unimelb.edu.au/people/james_docs/FYE.pdf

Punch, K. F. (2013). *Introduction to social research: Quantitative and qualitative approaches*. Sage. Retrieved from https://www.google.com/books?hl=zh-TW&lr=&id=G2fOAgAAQBAJ&oi=fnd&pg=PP1&dq=Introduction+to+social+research:+quantitative+and+qualitative+approaches&ots=j2sLzlgLvp&sig=fFHptKqVGiBf-SNbHxskirLO3KQ

Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data.* Sage.

Information Sheet

PROJECT TITLE

Student's perception of a successful first-year experience and its associated factors at a university in Hong Kong? A case-study with mixed-methods approach

What is the project about?

The first-year of undergraduate study is recognized to be crucial to student and what constitutes first-year success could mean very differently to different people. This study attempts to explore first-year experience and understand how to define first-year success from the perspective of being a first-year university student. Results of this study help the University to understand what is a successful first-year experience and how to further enhance these student experiences, and therefore contributes to the future planning at the institutional level.

What will the project investigator do?

This is the first phase of a doctoral research project which aims to explore student's first-year experience and how first-year students in defining success. As a researcher, I will work with a small number of first-year students at the Hong Kong Polytechnic University by inviting them to a group discussion (i.e. student focus group), to talk about their views and experience of studying first year at the university. The group discussion shall take place at the campus and last for approximately 45-60 minutes, with 8-10 students in a group.

Who has funded the project?

This project is not funded by any institutions or grants. I am completing the research as part of my Doctorate in Education, which I am studying via the Graduate School of Education, University of Bristol, UK.

What do I have to do?

An invitation email will be sent out in Blackboard in your programme and if you decide to take part in the project, you will be given a few timeslots to choose from for the student group discussion. You will only be asked to attend one session and the discussion will focus on your first-year experience at this university. The conversations will be recorded because what you say is important and I do not want to miss any of it. If you are not happy about this but would still like to share your thoughts, please let me know and we can arrange an alternative session with no recording.

Is it okay if I want to withdraw from the study?

You have to right to withdraw from this study at any time, up to two weeks after your participation in the discussion, without any reasons. You just need to let me (the investigator) know if you want to withdraw.

What will you do with the data?

All your identification and details will be treated as confidential and will be kept anonymously in any circumstances throughout the project. Personal information and opinions will not be named and identified anywhere in any reports. I may use quotations from what people say – however no individual will be named or able to be identified from this.

The researcher will comply with the legal requirements in relation to the storage and use of personal data as lay out in the Personal Data (Privacy) Ordinance (Cap. 486) (The Hong Kong Personal Data Privacy Ordinance). Once the study is completed, all data stored and analysed for this study will be archived electronically in a password protected folder in a password protected computer located in the researcher's computer. The data will be kept securely for up to seven years after the thesis or any work relating to the study are published.

How long will you be using my opinions?

The study is a doctoral thesis and shall continue for the next two-three years. A final report will be presented upon the completion of the study and your opinions will be recorded in an anonymous format. In other words, you will not be identified or named anywhere.

Can I see the final report of this study?

Absolutely you can. You can contact me, as the researcher, at any time to see the final report once when it is compiled. I am also happy to send you a summary of the findings of the group discussions if you would like to see this.

Who can I contact?

Please feel free to contact me at any time.

Kannass Chan	kannass.chan@polyu.edu.hk	(+852) 2766 6289
Jo Rose (Supervisor of this project)	jo.rose@bristol.ac.uk	-

Appendix 4 Focus group discussion guide

First-year experience - Focus group discussion guide

Describe purpose of the study; free to withdraw; no right/wrong answers; audio recording for note-taking purpose.

Introduction (5 mins)

- Self-introduction
- Brief discussion of the general purpose of the research study
- Rules and participant's rights (free to withdraw, no right/wrong answer, audio recording, speak one at a time)
- Quick mention of participants (i.e. all first-year students)

Discussion (50 mins)

Define first year success: *(e.g. Study/grade, social network/friendship, learning, participating extra-curriculum activities, relationships, interactions with faculty staff)*

1. Please think about your first-year study life at this university, can you describe and write down a successful first-year student in 5 words? Why? (use the paper given)
   你會怎樣描述一個第一年大學成功的學生？請列出三至五項
   (Researcher to use flipchart to build the list from students)

2. In your view, what would be the greatest achievement for a first-year student? Please name 3 achievements for a successful first-year students and explain why?
   你覺得什麼是一個成功的第一年大學生最大的成就（或得著）？

3. In your view, how would you describe a failure first-year experience? Why?
   你會怎樣描述一個不成功的第一年大學學生? 為什麼?

4. What should be the target for a successful first-year student? Why?
   你覺得什麼是一個成功第一年大學生應有的目標?

5. Describe 3 things that first-year student must do. Why?
   列出三樣你覺得第一年學生一定要做的事情, 為什麼?

6. Looking back now, if you have chance to "re-start" your first year university life, what would you do differently to what you have (or haven't) done?
   如果俾你從頭開始第一年的大學生涯, 你會做什麼與現在不一樣的事情？

7. Of what we have been discussed, write down 3 most important factors that affect your first year experience? Why?

Conclusion and thanks participants (5 mins)

- Thanks participants
- If they have questions, can email researcher

Appendix 5 First-year experience (FYE) questionnaire

First Year Experience Survey (4-Year Curriculum Students)

PolyU is committed to providing the best educational experience possible for our students. We are therefore very interested in your first year experiences at PolyU. Your feedback will help us greatly in enhancing our first year curriculum and student support activities/services for first-year students.

Please complete ALL questions below by choosing the answer that best represents your view. Thank you very much for your help with this important task.

Q0. Do you agree to linking your responses on this survey to information on your academic record?

☐ Yes ☐ No

[if Q0="No"] Would you still like to continue to fill out the survey?

☐ Yes ☐ No

[if Q0="No"] How old are you? ___ years old

[if Q0="No"] What is your gender? ? ☐ Male ☐ Female

1. How much has your First Year Experience at PolyU (e.g. common orientation programme, first year subjects, academic advising, co-curricular and extra-curricular activities, etc.) enabled you to achieve the following?

		Very much		Adequate		Very little
a.	Understand better the nature, basic concepts and study options of your Broad Discipline/Major	5	4	3	2	1
b.	Understand the expectations and graduation requirements of your intended programme/Major	5	4	3	2	1
c.	Understand the purposes and credit requirements of the General University Requirements (GUR)	5	4	3	2	1
d.	Acquire the fundamental/underpinning knowledge required for studying the upper-level courses in your chosen programme/Major	5	4	3	2	1
e.	Enhance your English language abilities for university studies	5	4	3	2	1
f.	Enhance your Chinese language abilities for university studies	5	4	3	2	1

		Very much		Adequate		Very little
g.	Develop a better understanding of yourself (e.g., abilities, interests, limitations, personality, etc.)	5	4	3	2	1
h.	Identify your own educational and career goals	5	4	3	2	1
i.	Develop a study plan according to your educational/career goals	5	4	3	2	1
j.	Develop interpersonal skills for functioning as an effective leader or team member	5	4	3	2	1
k.	Becoming aware of your social and national responsibilities as a citizen	5	4	3	2	1
l.	Improve your information skills (e.g., searching, evaluating and managing information)	5	4	3	2	1
m.	Critiquing other person's arguments or viewpoints	5	4	3	2	1
n.	Judging the credibility of information	5	4	3	2	1
o.	Making rational judgements based on logical reasoning	5	4	3	2	1
p.	Become more active and independent in your study	5	4	3	2	1
q.	Develop your problem solving ability	5	4	3	2	1
r.	Identifying problems and their causes	5	4	3	2	1
s.	Generating innovative solutions to deal with problems in professional and daily contexts	5	4	3	2	1
t.	Understand the basic concept and importance of entrepreneurship	5	4	3	2	1
u.	Adopt a healthy lifestyle (e.g. exercise regularly, maintain a balanced diet, maintain emotional stability, etc.)	5	4	3	2	1
v.	Understand the importance of academic integrity and how to avoid plagiarism in your work	5	4	3	2	1
w.	Make a smooth transition from secondary school to university	5	4	3	2	1
x.	**Overall**, how would you rate your overall gains in your learning?	5	4	3	2	1

2. To what extent do you agree with the following statements regarding your First Year Experience at PolyU?

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a.	Most of my first year subjects are intellectually stimulating	5	4	3	2	1
b.	I have difficulties in adjusting to the teaching and learning methods at university	5	4	3	2	1
c.	The workload in my first year of study is too heavy for me to cope	5	4	3	2	1
d.	Many of the assessments in my first year require mere memorisation of facts rather than deep understanding	5	4	3	2	1
e.	I have difficulties in coping with different types of assessments (e.g. individual assignment, group project, presentation, mid-term test, exam)	5	4	3	2	1
f.	I know where to turn for help when I encounter problems in my academic studies	5	4	3	2	1
g.	I know where to get help when I encounter personal problems	5	4	3	2	1

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
h.	Useful advice is available for academic matters	5	4	3	2	1
i.	There have been sufficient opportunities for me to interact with my teachers inside and outside class	5	4	3	2	1
j.	I feel connected with professors and fellow students in my Department/ Broad Discipline	5	4	3	2	1
k.	I have made a lot of new friends at PolyU	5	4	3	2	1
l.	I am aware of the student support services provided by different offices/units of PolyU (e.g. Student Affairs Office, Mainland and International Student Services etc.)	5	4	3	2	1
m.	I have not yet made up my mind on which major/programme to take	5	4	3	2	1
n.	I have learned to take more responsibility for my own studies	5	4	3	2	1
o.	There have been sufficient opportunities for me to take part in co-curricular and extra-curricular activities for all-round development	5	4	3	2	1
p.	I have difficulties in managing my time for studies and other activities	5	4	3	2	1
q.	I feel a sense of belonging to my Department/ Broad Discipline	5	4	3	2	1
r.	I feel a sense of belonging to PolyU	5	4	3	2	1

3. Please rate your overall satisfaction with the following aspects of your first year experience

		Very satisfied		Generally satisfied		Very dissatisfied
a.	Satisfaction with quality of teaching on first year subjects	5	4	3	2	1
b.	Satisfaction with overall quality of your first year experience at PolyU	5	4	3	2	1
c.	Satisfaction in making new friends at first year	5	4	3	2	1
d.	Satisfaction in participating social activities at first year	5	4	3	2	1
e.	Satisfaction with my level of involvement in serving social clubs/societies	5	4	3	2	1
f.	Satisfaction with my social life at first year	5	4	3	2	1
g.	Satisfaction with my academic performance at first year	5	4	3	2	1
h.	Satisfaction with my adjustment to university learning	5	4	3	2	1

4. Please indicate major problems/barriers, if any, that you have encountered in your first year at PolyU:

5. To what extent have you done the following with other students in your first year at PolyU?

		All the time	A lot	A little	Not at all
a.	Studied together	4	3	2	1
b.	Attended social events together	4	3	2	1
c.	Shared a meal together	4	3	2	1
d.	Had intellectual discussions outside class	4	3	2	1
e.	Doing extracurricular activities together	4	3	2	1
f.	Shared personal feelings and problems	4	3	2	1
g.	Discussed social/cultural issues outside class	4	3	2	1
h.	Shared a common living space together with other students	4	3	2	1
i.	Dated someone from university	4	3	2	1

6. To what extent have you done the following in your first year at PolyU?

		Once or more a week	A few times a month	Once to a few times a semester	Never
a.	Visited informally with teaching staff before/after class	4	3	2	1
b.	Made appointment to meet teaching staff in his/her office	4	3	2	1
c.	Asked teaching staff for information related to course	4	3	2	1
d.	Communicated with teaching staff via email, learning management system or other channels	4	3	2	1

7. How much time, on average, have you spent on the following activities during a TYPICAL UNIVERSITY WEEK in your first year at PolyU?

		Hours per week								
		>60	51-60	41-50	31-40	21-30	11-20	6-10	1-5	None
a.	Attending classes (including lectures, tutorials, laboratory/ practical classes, etc.)	9	8	7	6	5	4	3	2	1
b.	Preparing for class, revising materials after class, or studying for tests/exams	9	8	7	6	5	4	3	2	1
c.	Doing assignments, reports, homework, projects, etc.	9	8	7	6	5	4	3	2	1
d.	Reading books and/or internet materials not assigned by your teachers for intellectual enrichment or pleasure	9	8	7	6	5	4	3	2	1
e.	Part-time paid work (*excluding* work done to fulfill WIE requirement)	9	8	7	6	5	4	3	2	1
f.	Part-time unpaid work (e.g. volunteer work, *excluding* work done to fulfill WIE or service learning requirements)	9	8	7	6	5	4	3	2	1
g.	Exercising or sports	9	8	7	6	5	4	3	2	1

		Hours per week								
		>60	51-60	41-50	31-40	21-30	11-20	6-10	1-5	None
h.	Socializing and entertainment (e.g. email, TV, movies, computer games, hobbies, etc.)	9	8	7	6	5	4	3	2	1
i.	Co-curricular or extra-curricular activities at PolyU	9	8	7	6	5	4	3	2	1
j.	Leadership role/committee work in student groups (e.g. Students Union, student clubs etc.)	9	8	7	6	5	4	3	2	1
k.	Travelling to and from university, job or classes	9	8	7	6	5	4	3	2	1
l.	Sleep	9	8	7	6	5	4	3	2	1

8. During your first year at PolyU, have you…

	Yes	No
a. Met the Academic Advisor from your Department/Broad Discipline?	1	0
b. Met your OGUR Academic Counselor?	1	0
c. Attended PolyU's Common Orientation Programme?	1	0
d. Attended the orientation organized by your Department/ Broad Discipline?	1	0
e. Lived in the student hall/hostel for at least 1 semester?	1	0
f. Taken part in Read@PolyU?	1	0
g. Participated in Peer Mentoring Programmes organized by your Faculty/Department/Student Affairs Office?	1	0

7. Please suggest how the First Year Experience at PolyU can be improved:

Thank you for completing the questionnaire!

Appendix 6 A summary of the variables used in the regression analysis

Variables	Descriptions
DV1: social success - composite (4 items)	Making new friends at first year Participating social activities at first year My level of involvement in serving social clubs/societies My social life at first year
DV2: academic success - composite (2 items)	My academic performance at first year My adjustment to university learning
DV3: personal success - composite (3 items)	Overall gains in your learning Overall quality of first year experience Make a smooth transition from secondary school to university
IV: Sense of belonging scale (6 items)	I feel connected with professors and fellow students in my Department/ Broad Discipline I have made a lot of new friends at PolyU I feel a sense of belonging to my Department/ Broad Discipline I feel a sense of belonging to PolyU I have learned to take more responsibility for my own studies There have been sufficient opportunities for me to take part in co-curricular and extra-curricular activities for all-round development
IV: Peer interaction scale (9 items)	Studied together Attended social events together Shared a meal together Had intellectual discussions outside class Doing extracurricular activities together Shared personal feelings and problems Discussed social/cultural issues outside class Shared a common living space together with other students at PolyU Dated someone from university
IV: Faculty interaction scale (4 items)	Visited informally with teaching staff before/after class Made appointment to meet teaching staff in his/her office Asked teaching staff for information related to course Communicated with teaching staff via email, learning management system or other channels
IV: Perceived support scale (5 items)	I know where to turn for help when I encounter problems in my academic studies I know where to get help when I encounter personal problems I am aware of the student support services provided by different offices/units of PolyU (e.g. Student Affairs Office, Mainland and International Student Services etc.) Useful advice is available for academic matters There have been sufficient opportunities for me to interact with my teachers inside and outside class
IV: Gains in personal development scale (14 items)	Develop a better understanding of yourself (e.g., abilities, interests, limitations, personality, etc.) Identify your own educational and career goals Develop a study plan according to your educational/career goals Develop interpersonal skills for functioning as an effective leader or team member Becoming aware of your social and national responsibilities as a citizen

	Improve your information skills (e.g., searching, evaluating and managing information) Critiquing other person's arguments or viewpoints Judging the credibility of information Making rational judgements based on logical reasoning Become more active and independent in your study Develop your problem solving ability Identifying problems and their causes Generating innovative solutions to deal with problems in professional and daily contexts Adopt a healthy lifestyle (e.g. exercise regularly, maintain a balanced diet, maintain emotional stability, etc.)
IV: Academic transition scale (6 items)	I have difficulties in adjusting to the teaching and learning methods at university Many of the assessments in my first year require mere memorisation of facts rather than deep understanding I have difficulties in coping with different types of assessments (e.g. individual assignment, group project, presentation, mid-term test, exam) I have difficulties in managing my time for studies and other activities The workload in my first year of study is too heavy for me to cope I have not yet made up my mind on which major/programme to take
IV: Students' background variables	First-year GPA Gender Age University entrance scores
Engagement variables (hours per week)	Attending classes Preparing for class, revising materials, or studying for test/exams Doing assignments, reports, homework, projects, etc. Reading books and/or internet materials not assigned by your teachers PT paid work PT unpaid work Exercising or sports Socializing and entertainment Co-curricular or extra-curricular activities at PolyU Leadership role/committee work in student groups Travelling to and from university, job or classes Sleep

Appendix 7 Cronbach alpha coefficients for each domain of success

DV	Cronbach's Alpha based on standardized items
DV1: social success - composite (4 items)	0.893
DV2: academic success - composite (2 items)	0.818
DV3: personal success - composite (3 items)	0.815

Appendix 8 Email invitation, reminder, SMS and thank you email (online survey)

Email invitation to first-year students

PROJECT TITLE

Student's perception of a successful first-year experience and its associated factors at a university in Hong Kong? A case-study with mixed-methods approach

The University is committed to providing the best educational experience possible for our students. We are therefore very interested in finding out about your first year experience at PolyU. Your feedback will help us greatly in enhancing our first year curriculum, student support activities/services and how to further enhance these student experiences for first year students. This study is also part of a study carried out by a researcher who is completing her Doctorate in Education programme at the University of Bristol, UK.

To help us understand student responses more fully, we would like to link your responses to this survey to other data about you from the University's database, including your age, gender, GPA and university entrance score. If you agree to this, your Netid will be used to perform this data linking, but all information you provide will remain confidential and private. Furthermore, only aggregated results will be reported and no student will be identified through their response to any items on the survey. Or if you prefer, you can complete the survey without this data linking and still provide us with valuable feedback. You will have the opportunity to indicate on the survey whether you are happy for your data to be linked to the university database.

This survey should take you no more than 15 minutes to complete and it is up to you whether you want to take part. By clicking on the link below, you indicate that you are happy to take part in the survey.

If you have any queries, please do not hesitate to contact Christine Armatas (christine.armatas@polyu.edu.hk) or Kannass Chan (kannass.chan@polyu.edu.hk).

Thank you very much for your help with this important task.

AVP(Learning & Teaching)

Prof. Chetwyn Chan

Email reminder to students

Dear {FIRSTNAME},

Are you ready to tell us your views about your first year at PolyU? The First Year Experience (FYE) Survey is now available and your feedback will be very useful to us in improving students' first year experience.

Click either the link or logo below and tell us your views! Thank you!!

https://www2.polyu.edu.hk/edc/authws/survey.php

If you have any questions about this survey, please email christine.armatas@polyu.edu.hk or kannass.chan@polyu.edu.hk .

Thank you for your time,

Prof. Chetwyn Chan
Associate Vice President (Learning and Teaching)
The Hong Kong Polytechnic University

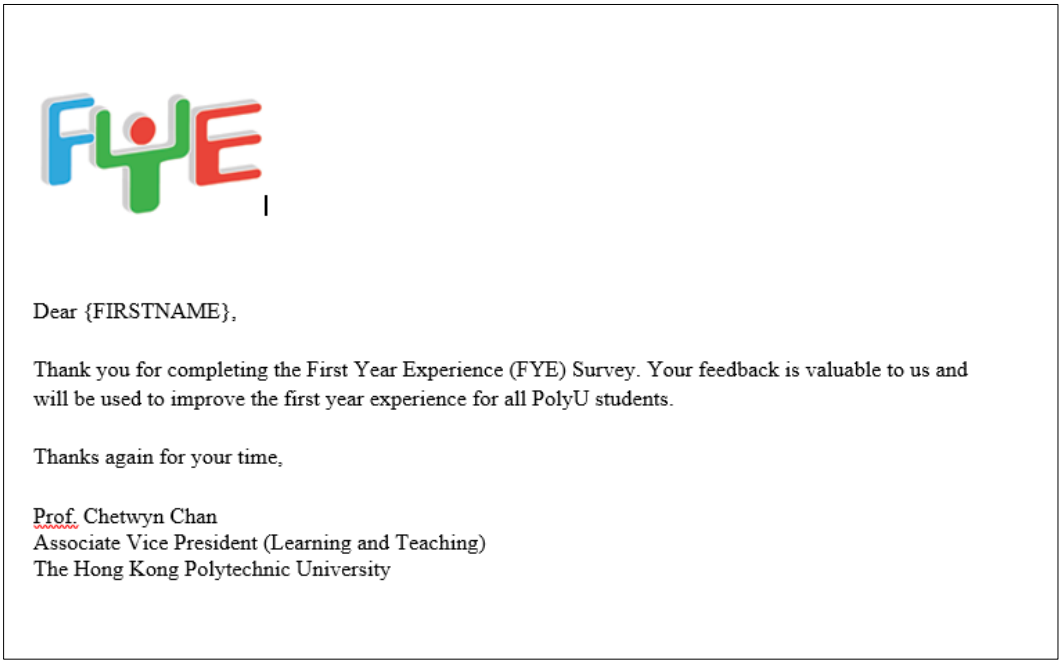
[Technical problems?]

SMS messages

PolyU's First Year Experience Survey is available NOW! Tell us your 1st year at PolyU at https://www2.polyu.edu.hk/edc/authws/survey.php. Thank you.

Deadline for your First Year Experience Survey is coming soon. Please fill out the survey at https://www2.polyu.edu.hk/edc/authws/survey.php NOW. Thank you.

Thank you email to students



Dear {FIRSTNAME},

Thank you for completing the First Year Experience (FYE) Survey. Your feedback is valuable to us and will be used to improve the first year experience for all PolyU students.

Thanks again for your time,

Prof. Chetwyn Chan
Associate Vice President (Learning and Teaching)
The Hong Kong Polytechnic University

Appendix 9 A list of modifications to the wordings in the FYE questionnaire (Pilot)

Original version	**Modified version**
Rooming together	**Shared a common living space together with other students**
Dating	Dated **someone from university**
Discussed **race relations** outside class	Discussed **social/cultural issues** outside class
Visited informally with **instructor** before/after class	Visited informally with **teaching staff** before/after class
Made appointment to meet **instructor** in his/her office	Made appointment to meet **teaching staff** in his/her office
Asked **instructor** for info related to course	Asked **teaching staff** for info related to course
Communicated with **instructor** via email	Communicated with **teaching staff** via email, **leaning management system or other channels**

Appendix 10 VIF statistics in the regression models

Collinearity Statistics	Social Success		Academic Success		Personal Success	
	Tolerance	**VIF**	**Tolerance**	**VIF**	**Tolerance**	**VIF**
Age	.964	1.037	.964	1.037	.964	1.037
gender2_	.907	1.103	.907	1.103	.907	1.103
sem1_GPA	.733	1.364	.733	1.364	.733	1.364
D_Best 5	.760	1.316	.760	1.316	.760	1.316
Enga_aca	.465	2.151	.465	2.151	.465	2.151
FacInt	.718	1.393	.718	1.393	.718	1.393
AcaTrans_rev	.940	1.063	.940	1.063	.940	1.063
PeerInt	.579	1.728	.579	1.728	.579	1.728
Enga_soc	.271	3.696	.271	3.696	.271	3.696
PersonDvlp	.486	2.059	.486	2.059	.486	2.059
Enga_ow	.164	6.101	.164	6.101	.164	6.101
Enga_wor	.175	5.721	.175	5.721	.175	5.721
SB	.396	2.526	.396	2.526	.396	2.526
Support	.477	2.098	.477	2.098	.477	2.098

Appendix 11 Ethics application to the University of Bristol (Phase 2)

GSoE RESEARCH ETHICS FORM

It is important for members of the Graduate School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct. Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. *This form must therefore be completed for each piece of research carried out by members of the School, both staff and students*

The GSoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

1. **Arrange a meeting with a fellow researcher**
   The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.
2. **Complete the form on the back of this sheet**
   The form is designed to act as a record of your discussion and any decisions you make.
3. **Upload a copy of this form and any other documents (e.g. information sheets, consent forms) to the online ethics tool at:** https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications**.**

   Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the GSoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion

You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See http://www.bristol.ac.uk/education/research/networks/ethicnet for links to several such sets of guidelines.

1. Researcher access/ exit
2. Information given to participants
3. Participants right of withdrawal
4. Informed consent
5. Complaints procedure
6. Safety and well-being of participants/ researchers
7. Anonymity/ confidentiality
8. Data collection
9. Data analysis
10. Data storage
11. Data Protection Act
12. Feedback
13. Responsibilities to colleagues/ academic community
14. Reporting of research

Be aware that ethical responsibility continues throughout the research process. If further issues arise as your research progresses, it may be appropriate to cycle again through the above process.

Name(s): Chan, Kannass
Proposed research project: Student's perception of a successful first-year experience and its associated factors at a university in Hong Kong? A case-study with mixed-methods approach
Proposed funder(s): N.A.
Discussant for the ethics meeting: Barbara Tam
Name of supervisor: Jo Rose
Has your supervisor seen this submitted draft of your ethics application? Y/~~N~~

Please include an outline of the project or append a short (1 page) summary:

Much research have recognized the importance of the first-year undergraduate study in achieving student success (McInnis, James & McNaught, 1995). Over the past 20 years, research on first-year experience in higher education focused mainly on student retention, persistence, or even withdrawal/non-completion. Student's withdrawal decision is often complex, likely to be accumulated of many components (Harvey et al., 2006), relates to academic and social integration, sense of belonging, student socio-demographic characteristics and impact of support programmes etc. Thus, this study attempts to investigate what factors influence first-year experience and how these factors play a role in determining first-year success.

The study employs a mix-method approach; first phase of the study is qualitative while second phase in quantitative method. First phase of the study had been performed to identify student's definition of first-year success. It aims to provide a foundation and lay out a structure to inform the second phase of the study. This ethic application is therefore applied for the second phase of the study (i.e. the quantitative method via online survey).

The aims of this phase is to gain understanding of the associated factors to first-year success and how they influence student success. The investigated factors include constructs in sense of belonging, perceived support, personal and social development, peer interaction, faculty relations and academic transition. The major research questions include:

- What are the key factors influencing student first-year success?
- How each success relates to each other?
- How does student demographic information (e.g. gender, age) affect student success?

This study is situated in the pragmatism paradigm and it is a case study at the university that I am currently working at. Being an educational developer at the central office of the university, I work very closely with teachers on issues in relation to teaching and student learning. In a daily operation, I do not usually work with students or directly in contact with them. The second phase of the study employs a quantitative method where a questionnaire will be developed [see appendix] and used to answer the research questions. The questionnaire is developed partly based on the first phase of the study, and partly adopting the scales that have been used to understand student's first-year experience. All first-year students at the University, regardless of their study disciplines, will be invited to participate this online questionnaire about their first-year experience near the end of their first-year.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

I have paid attention and considered different kinds of ethical issues that may arise in my study, and I understand that I, as a researcher, have the responsibility to ensure my research follows the ethic principle throughout the study in the process of research planning, data collection and data analysis (Punch, 2013).

The first step to proceed with the ethical approach is to discuss with fellow classmate and supervisor about the possible ethical problems that may arise from this study. The purpose of doing this is to seek independent opinions and different perspectives of viewing and dealing with potential ethical issues in this kind of educational research.

The following aspects are the issues of ethical concern for this study:

1. Researcher access/exit

   The researcher has gained the approval from the associate director of the Educational Development Centre of a university in Hong Kong, to conduct this study. This Centre is a central unit of the University, responsible in providing strategies and future direction to the university in relation to teaching and learning matters.

   All first-year students at this university will be the potential participants of this study. Student's ID will be retrieved from the University's central database and will be used as an identifier for the purpose of sending reminder email to students who haven't completed the survey during survey period. The survey will be setup online under the university platform, and will be piloted before the actual implementation. The survey is planned to be opened for approximately 2 weeks and email invitation will be sent out from the central unit (i.e. Educational Development Centre) to all first-year students for their participation to this survey. Two reminders emails will be sent to all students who haven't completed the survey after the first week of the survey period (one to be sent one week after the commencement of the survey, and second reminder email to be sent one day before the survey closes). Each year, approximately 3000 students registered as a new student at this university.

   I am also aware of the potential conflict of interest, ethical and moral dilemmas. For example, students may worry about what they say in the questionnaire may affect their outcomes in any of their subjects. By working at the central unit of the university in terms of planning and administrating the survey, we can be seen as an independent party as the central unit does not usually have direct contact with the students. At the same time, I will assure all participants by explaining the aim of the study in the invitation email prior to the start of the survey online, and seek consensus to all participants to link up certain student's information (i.e. date of birth, gender, university entrance score and GPA) from the central database. All student's responses will be anonymous, confidential, and will only be presented in an aggregated way.

   After participated completed the online survey, a thank you note will be emailed to all students who participated the study.

2. Information given to participants
3. Participants right of withdrawal

   All first-year students are potential participants of this study and will receive an email invitation to participate an online survey about their first-year experience. In the email invitation, information about the purpose of the study, the procedure of data collection, and how data confidentiality will be ensured in the study (see attached document for the information sheet) will be provided. Participants will give consent to participate the study by clicking the link provided in the email. In addition, consent about obtaining student's additional information (i.e. date of birth, gender, university entrance score and GPA) from the university's central database will be sought in the questionnaire.

4. Informed consent
5. Complaints procedure

   The researcher will give all participants the information and informed the participants that their participation is voluntary and they have the right to withdraw from this study at any time. Consensus will also be sought to link up student's information from the University's central database. Contact of supervisor and the researcher will be included for any enquiries.

6. Safety and well-being of participants/researchers

   As the survey is online, participants can complete the survey any time at their convenience, and there is no unreasonable safety or well-being issues of researcher and participants in this study.

7. Anonymity/confidentiality

   The identification of participants will be anonymous and kept confidential in any circumstances throughout the data analysis and reporting processes. The researcher will ensure that no identification of students will be shown in the report if direct quotes are to be used.

8. Data collection

   Since the survey is setup online, data collection will be conducted anywhere at student's convenience. Also, students will be allowed to save their responses and resume the survey anytime if they wish to. Students will be informed with the procedure, issues with anonymity and confidentiality. Data collection will start near the completion of student's first-year study, and will be open for two weeks.

9. Data analysis

   Data will be cleaned and analysed in the statistical software called SPSS. Exploratory factor analysis will be performed to ensure the reliability of the constructs and regression analysis will be used to identify relationships between dependent variables (e.g. student success) and the independent variables (e.g. construct in sense of belonging).

10. Data storage
11. Data Protection Act

Data will be kept securely on researcher's computer with password protected, and the form of any publication will not directly or indirectly lead to a breach of agreed confidentiality and anonymity. The researcher will comply with the legal requirements in relation to the storage and use of personal data as lay out in the Personal Data (Privacy) Ordinance (Cap. 486) (The Hong Kong Personal Data Privacy Ordinance). The researcher is also aware that this is a study at a UK university, and therefore the latest UK General Data Protection Regulation (https://www.gov.uk/government/publications/data-protection-bill-general-processing) is also complied and the researcher is working in accordance with that. Once the study is completed, all data stored and analysed for this study will be archived electronically in a password protected folder in a password protected computer located in the researcher's computer. The data will be kept securely for up to seven years after any journal articles or other work relating to the study are published.

12. Feedback
    The researcher will offer the participants a summary of the findings from the online survey if they would like it.

13. Responsibilities to colleagues/academic community
14. Reporting of research
    The researcher will use the data and findings of this study mainly for her doctoral dissertation and for the institution to identify areas for improving student's first-year experience. The findings may also be published afterwards.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the GSoE's ethics co-ordinators who will suggest possible ways forward.

Signed:	(Researcher) Signed:	(Discussant)
Date: 1 March 2018	Kannass Chan	Barbara Tam
		Jo Rose (Supervisor)

Reference:

McInnis, C., James, R., & McNaught, C. (1995). First year on campus. *Canberra: AGPS*. Retrieved from https://www.cshe.unimelb.edu.au/people/james_docs/FYE.pdf

Punch, K. F. (2013). *Introduction to social research: Quantitative and qualitative approaches*. Sage. Retrieved from https://www.google.com/books?hl=zh-TW&lr=&id=G2fOAgAAQBAJ&oi=fnd&pg=PP1&dq=Introduction+to+social+research:+quantitative+and+qualitative+approaches&ots=j2sLzlgLvp&sig=fFHptKqVGiBf-SNbHxskirLO3KQ

Information Sheet

PROJECT TITLE

Student's perception of a successful first-year experience and its associated factors at a university in Hong Kong? A case-study with mixed-methods approach

The University is committed to providing the best educational experience possible for our students. We are therefore very interested in finding out about your first year experience at PolyU. Your feedback will help us greatly in enhancing our first year curriculum, student support activities/services and how to further enhance these student experiences for first year students. This study is also part of a study carried out by a researcher who is completing her Doctorate in Education programme at the University of Bristol, UK.

To help us understand student responses more fully, we would like to link your responses to this survey to other data about you from the University's database, including your age, gender, GPA and university entrance score. If you agree to this, your Netid will be used to perform this data linking, but all information you provide will remain confidential and private. Furthermore, only aggregated results will be reported and no student will be identified through their response to any items on the survey. Or if you prefer, you can complete the survey without this data linking and still provide us with valuable feedback. You will have the opportunity to indicate on the survey whether you are happy for your data to be linked to the university database.

This survey should take you no more than 15 minutes to complete and it is up to you whether you want to take part. By clicking on the link below, you indicate that you are happy to take part in the survey.

If you have any queries, please do not hesitate to contact Christine Armatas (christine.armatas@polyu.edu.hk) or Kannass Chan (kannass.chan@polyu.edu.hk).

Thank you very much for your help with this important task.

AVP(Learning & Teaching)
Prof. Chetwyn Chan

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

CONSENT TO LINK STUDETN'S RESPONSE TO THE UNIVERSITY'S CENTRAL DATABASE

First-year experience Survey

Student consent to participate the survey will be sought by providing a link to student in the email invitation. They can simply click on the link provide to indicate that they are happy to take part in the survey.

Additional consent will be obtained by asking them the following questions in the online questionnaire:

1. Do you agree to linking your responses on this survey to information on your academic record?

   ☐ Yes ☐ No

2. **[if Q1="No"]** Would you still like to continue to fill out the survey?

   ☐ Yes ☐ No

3. **[if Q1="No"]** How old are you? ___ years old

4. **[if Q1="No"]** What is your gender? ? ☐ Male ☐ Female

Human Ethics Approval

Dear Chan Ching Man Kannass

Please note that the following application for human ethics approval has been approved:

Project Title: Student's perception of a successful first-year experience and its associated factors
Application Number: HSEARS20160622004 (Click here to view the application)
Principal Investigator: Chan Ching Man Kannass
Department: Education Development Centre
Approver / Delegate: Lam Siu Yin

Human Subjects Ethics Application Review System
(It is a system-generated message. Please do not reply to it)

c.c. Approver / Delegates

Appendix 12 Descriptive statistics - students' self-reported learning gains

Description	Mean	SD
Personal development (Overall)	**3.55**	**0.64**
Develop a better understanding of yourself (e.g., abilities, interests, limitations, personality, etc.)	3.48	.87
Identify your own educational and career goals	3.45	.91
Develop a study plan according to your educational/career goals	3.41	.88
Develop interpersonal skills for functioning as an effective leader or team member	3.54	.84
Becoming aware of your social and national responsibilities as a citizen	3.43	.89
Improve your information skills (e.g., searching, evaluating and managing information)	3.77	.78
Critiquing other person's arguments or viewpoints	3.58	.75
Judging the credibility of information	3.65	.76
Making rational judgements based on logical reasoning	3.66	.75
Become more active and independent in your study	3.68	.84
Develop your problem solving ability	3.70	.79
Identifying problems and their causes	3.67	.75
Generating innovative solutions to deal with problems in professional and daily contexts	3.49	.80
Adopt a healthy lifestyle (e.g. exercise regularly, maintain a balanced diet, maintain emotional stability, etc.)	3.27	1.02
Sense of belonging (Overall)	**3.53**	**.64**
I feel connected with professors and fellow students in my dept/BD	3.33	.86
I have made a lot of new friends at PolyU	3.56	.90
I feel a sense of belonging to my Department/ Broad Discipline	3.44	.88
I feel a sense of belonging to PolyU	3.50	.88
I have learned to take more responsibility for my own studies	3.80	.72
There have been sufficient opportunities for me to take part in co-curricular and extra-curricular activities for all-round development	3.53	.83
Perceived support (Overall)	**3.44**	**.65**
I know where to turn for help when I encounter problems in my academic studies	3.47	.81
I know where to get help when I encounter personal problems	3.43	.85
I am aware of the student support services provided by different offices/units of PolyU	3.32	.86
Useful advice is available for academic matters	3.49	.80
There have been sufficient opportunities for me to interact with my teachers inside and outside class	3.47	.84

Description	Mean	SD
Peer interaction (Overall)	**2.52**	**.54**
Studied together	2.55	.70
Attended social events together	2.52	.75
Shared a meal together	2.95	.75
Had intellectual discussions outside class	2.62	.67
Doing extracurricular activities together	2.52	.76
Shared personal feelings and problems	2.70	.76
Discussed social/cultural issues outside class	2.60	.76
Shared a common living space together with other students at PolyU	2.26	.97
Dated someone from university	1.91	.94
Faculty interaction (Overall)	**2.24**	**.58**
Visited informally with teaching staff before/after class	2.03	.75
Made appointment to meet teaching staff in his/her office	2.08	.69
Asked teaching staff for information related to course	2.33	.74
Communicated with teaching staff via email, learning management system or other channels	2.52	.71
Academic transition (Overall)	**3.04**	**.65**
I have difficulties in adjusting to the teaching and learning methods at university	3.10	.89
Many of the assessments in my first year require mere memorisation of facts rather than deep understanding	3.14	.92
I have difficulties in coping with different types of assessments (e.g. individual assignment, group project, presentation, mid-term test, exam)	3.01	.94
I have difficulties in managing my time for studies and other activities	3.14	.94
The workload in my first year of study is too heavy for me to cope	3.17	.90
I have not yet made up my mind on which major/programme to take	2.66	1.05
Participation in academic activities (number of hours per week)	**29.4**	**18.04**
Attending class	34.1	19.31
Prepare for class	25.5	19.96
Doing assignments	28.4	19.88
Work (number of hours per week)	**13.9**	**16.44**
Part-time paid work	16.23	19.59
Part-time unpaid work	10.24	17.44
Social activities (number of hours per week)	**17.5**	**16.67**
Socializing and entertainment	24.8	19.23
Co-curricular or extra-curricular activities at PolyU	14.4	18.58
Leadership role/committee work in student groups	13.4	18.96
Own activities (number of hours per week)	**16.7**	**17.5**
Reading books/internet materials not assigned by teacher	18.1	19.47
Exercising or sports	15.3	18.50